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NATURE AND THOUGHT

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NATURE AND THOUGHT

AN INTRODUCTION TO A NATURAL PHILOSOPHY

BY

ST. GEORGE MIVART

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PREFACE.

THERE are now few educated persons who do not feel some interest in one or more branches of Physical Science; and, amongst those so interested, an increasing number cannot rest satisfied without inquiring into those deeper problems which underlie all science. Such problems deservedly occupy public attention, for they have very important practical results. The object of this book is to express, in terms as little technical as may be, the course and outcome of recent discussions on questions of this fundamental character. Its author has taken all the pains he can to represent accurately those views from which he dissents, and to avoid any over-statement of evidence for those to which he adheres. Much use has been made of Mr. Arthur Balfour's 'Defence of Philosophic Doubt,' and obligation has to be expressed to the Rev. Frederick

CORNELL

Rymer, D.D., for friendly criticism and aid, especially with respect to the questions of 'free-will,' and the bearing of 'motives' on our knowledge of 'causation,' several of the arguments as to which are derived from his writings. Analogous obligations have also to be expressed to the Rev. Robert Clarke, F.L.S.

71 SEYMOUR STREET, W.

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NATURE AND THOUGHT.

CHAPTER I.

INTRODUCTORY GROUPINGS.

In a small ravine on the verge of Sheffield Forest, in Sussex, there is a shady nook, where on hot summer days the author has loved to sit and where much of this work was done. There, between banks so steep and woody that the sky is almost hidden by meeting boughs of birch and oak, alder and chestnut, a tiny streamlet winds its way, and falls with ceaseless, copious drip from moss-grown rocks into a small pool. All around, tall bracken ferns stretch up towards the light, while masses of blechnum, with their twofold graceful fronds, clothe the banks lower down. Where moss is wanting, on jutting pieces of sandstone, there liverworts have their hold, and campanulas, potentillas, scabious, and agrimony, with corydalis, foxgloves, and asphodels have each their station, which they struggle to extend. Besides the drip and ripple of the streamlet, is heard the constant hum of active insect life, and occasionally the drowsy note of over-sailing

rooks. Busy ants pass perseveringly to and fro along their well-trod paths, and every now and then a butterfly or moth quivers in the chequered light, and the beautiful giant dragon-fly hovers over, or darts down upon, the pool in which another tiny world may be watched in rapid motion. What is the special charm of a bit of nature of this kind? It is not in a mere soothing of the senses or vague revival in the imagination of pleasures formerly experienced. A mere rustic may indeed have pleasure in such a spot, and every lover of the picturesque may feel its charm, and indistinctly perceive at least some part of its meaning. Only the skilled lover of nature, however, who knows much of her laws and of different classes of living creatures, can thoroughly appreciate all its interest and charm.

What the man of science therein appreciates is, the display of natural harmony, the unity in multifold variety, and the delicate balance of physical and vital activities which it manifests. Evidently the greater his knowledge, the more fully his mind will be able to embrace the complex inter-relations of its animal and vegetal inhabitants, and the more intense will be the intellectual pleasure he may derive from its contemplation.

The great natural phenomena of the world—the forest, the ocean, the desert, and the seeming chaos of mountain masses—present on a vast scale charms of the very same nature to the mind qualified by education to appreciate them. Thus in that great continent of foliage, Brazil, we have a land which has produced, as it were, a great symphony of organic

harmony, composed in the forest 'key.' There we find, specially modified for tree-life, many orders of animals which elsewhere are not so modified—above all its sloth, a creature fitted for the forest, as the dolphin for the water, or the eagle for the air. There, also, as Alfred Wallace has so graphically described, forest is fitted to, and superimposed on, forest. At a great altitude, an undulating sea of foliage, rich with animal life, is spread out in the dazzling sunshine, borne up on lofty columns which rise through the obscurity of the vast space beneath, wherein a second growth, of what would elsewhere seem noble trees, finds a congenial home. Beneath these, again, there may yet be another similar but smaller growth, while lycopods and a multitude of shrubs and humbler herbs clothe the soil. Here and there great bunches of flowers hang down, breaking out abruptly from the stems of tall palms for the benefit of the fertilising visits of the large lustrous butterflies which flit and sweep to and fro in the shade. The colour of the abundant verdure even gains upon the animal world itself, and snakes and lizards, frogs and insects very commonly wear a livery of green. Not only colour, but even form, may be thus affected, and the strange leaf-insects crawl about each in limb and body a perfect foliar fragment.

For ages men have felt the charm of the ocean. Its alternating moods, and the mystery of its unknown depths and limits, stimulated the imagination of earlier races of mankind. Science, by defining boundaries and sounding depths, has indeed deprived it of a certain fascination, yet at the same time it

has, by revealing many harmonious relations unknown before, greatly added to its intellectual attractiveness. We see it now in direct connection with the solar system, its tidal wave acting as a drag upon the earth's rotation. Its chilly depths have become known as peopled with animal life, peculiarly fitted for an abode where no sunlight can descend and where the darkness is only lit by the phosphorescence of many of its inhabitants.

Very admirable are the constant interactions which take place between the ocean and the coral reefs which rise to its surface! Each such calcareous living mass, clothed with its alternately expanding and contracting animal flowers, not only bears unharmed the brunt of the waves which break upon it, but actually owes to them its nourishment and increase. The more the waves beat upon that seemingly insignificant obstacle, the more they are slowly driven back by it, till at last the minute secular upgrowth of the coral thus nourished may have actually forced back the sea for hundreds of miles—as in America, where the State of Florida has, in many thousands of years, been thus built up into dry land. Moreover, just as we saw the colour of the foliage impress itself on numerous kinds of forest animals, so also the sea's transparency similarly affects many of its living inhabitants, which are as absolutely transparent as glass.

Even desert regions, in spite of the rarity of life there found, afford examples of organic harmony. The lion, many snakes, lizards, and other creatures, exhibit in their sandy tints an adaptation to their dwelling place, and the appropriate organisation

of the camel is a trite subject of remark. Less known but not less noteworthy are the wonderful cacti which, though inhabiting perfectly arid and rainless Mexican deserts, yet store up within their rounded, spiny masses such juicy stores of beverage that their eccentric forms are more grateful to the eye of the tired and thirsty traveller than would be trees with the most graceful and varied foliage.

Love for the aspect of rugged mountains is a modern development of taste. But in addition to the æsthetic beauties now discovered to exist in scenes which before were deemed savage and horrible—in addition to the charm of majestic masses, changing in tint as seen beneath changing skies—the advance of science has given to the student of nature the pleasure of understanding their various geological relations. With Professor Ramsay's aid we may study ancient history of surpassing interest in every English range of hills, while, further south, we may trace the devastating floods of lava poured out by the volcanoes of Auvergne, or see in imagination Alpine summits rise as wooded islets from the ocean at a time when Skiddaw and Snowdon were already venerable from age. The various mountain organisms now living, the chamois and the ibex, the saxifrages, campanulas, orchids, and the whole multitude of brilliant Alpine plants, are all instances of admirable natural harmony. Even the very glacier, with its power of internal change accommodating it to rocky passages differing in size, and with its relation to past history, is a sort of crystal poem.

In all these instances of natural harmony there may be said to be not only beauty but a certain

'goodness' as conducive to an end beyond itself; the conservation of the world's vigorous life, and the intellectual and æsthetic development of its noblest denizen — man. Truth also is a correspondence between thought and things external. If therefore we may conceive what, for lack of a better name, we may call intelligent intention as underlying nature, then each such harmonious assemblage may, as accurately corresponding with such intention, be called 'true.'

As contrasting with the beauty of these natural harmonies, much of man's handiwork is hateful to the naturalist, as marring nature's handiwork. Let a new land be discovered with a peculiar fauna and flora full of scientific interest, and straightway the European purposely introduces his thistles, his sparrows, his rabbits or his goats, and the harmonious balance which has resulted from the organic interplay of ages is at once destroyed. Downright evil is often the result. Forests are recklessly felled, and arid, rainless wastes or dismal, fever-laden swamps ensue. How has not the south of Europe been devastated by the axe! When the woods are left, their birds are killed and destructive insect-swarms are the consequence. Apart, however, from the blame justly due to such actions, the feeling sometimes thus entertained against human action generally, is an exaggerated sentiment due to blindness to a still higher harmony. The ancients had no such feeling and viewed with unmixed pleasure the action of man upon the world about him. Indeed man forms, in one sense, a part of nature, and his works, when not in themselves inharmonious, should blend with their

surroundings and give rise to an augmented beauty in the whole. And so they may blend. No Greek temple mars an Attic scene; no graceful campanile stands as a blemish on the Italian coast. A Gothic castle, so wedded to its rocky mountain base that it seems to grow forth from it, is in harmony with the scene around it. The mediæval abbey-fortress of St. Michael's is an ornamental crown to the Mount so named, and Tintern and Rievaux are no eyesores in the leafy valleys wherein they nestle.

From the consideration of nature thus blended with art, let us turn to the consideration of art itself. That a painting should possess the highest beauty, requires not only perfect drawing and due harmony in colour, tone, and disposition of tints, but also harmony of thought in the conception of its subject. That subject also should be one which a well-balanced mind may fitly desire to represent. If it is itself repulsive, no technical skill can compensate for a defect in such a highest requisite for harmony. But a beautiful picture is not only beautiful; it may be said to have an end beyond itself in making known the ideas or feelings which ought to be represented by it, and in so far as it expresses these with force and clearness it may be called 'good.' It may also be termed 'true' if it truly responds to the conception which the artist intended to express by it. The same remarks of course apply to sculpture.

As to music, since perhaps in no past age was it so widely appreciated as now, it is hardly necessary to point out how due proportion constitutes not only its beauty but its essence, since it is only 'rhythm' which causes it 'to be' at all. The due proportions

of successive rhythmical vibrations make the single musical note and melody; the due proportions between simultaneous rhythmical vibrations give birth to musical harmony. A good orchestra is constituted by due proportions between different resonant materials—a proper balance of instruments—and proper alternations of force and rapidity, due pianos and fortes, diminuendos and crescendos, accelerations and retardations, accent and pause, constitute good playing.

But perfect music has an end beyond itself—beyond the mere charm of sound. It should be a vehicle for expressing ideas and feelings, and should harmonise with the conceptions and emotions which the composer intended it to suggest. It may be said to be 'good' and 'true' in so far as it so serves, and provided the conceptions themselves are not of a very inferior order, it may be 'beautiful.' The importance of the last consideration is obvious. Who would place a chorus of Offenbach's Orpheus on a level with Handel's Hallelujah? But it is possible so to elaborate a musical composition, as to spoil what with less involution and complexity of arrangement would be excellent. In music of the greatest perfection we have perfect proportions aptly interpreting the highest conceptions. Such music must be allowed to be at once beautiful, true, and good.

Architecture shows in another way, but no less clearly, how exactness of proportion is, as it were, the soul of beauty. Its main problems are how most fitly to enclose a space with solid structures, and to conflict most successfully with the force of

gravity. Evidently this may be done in two ways. It may be done by opposing to gravity the mere molecular resistance of solid masses of stone, wood, or metal—as when one stone is placed upon another which is in stable equilibrium. This may be said to be the passive or static form of architecture. It may be done, secondly, by such a skilful arrangement of parts as to make the force of gravity conflict with and defeat itself by an exact counterpoise of thrusts —as when one stone tending to fall in one direction, is supported by another tending to fall in another direction. This may be called the active or dynamic form of architecture.

Each has its own charm. We see good examples of static construction in the sombre repose of Egyptian architecture, from its time-defying Pyramids to its temples of Philæ and Karnac, so impressive from the superfluous strength of their many rows of close-set massive columns. In Grecian buildings we still have static repose brightened by delicacy of build and newly wrought-out harmonies of proportion. Greece, however, in spite of its many artistic gifts, did not rise to dynamic construction; but Rome, full of that energy which made it the world's lawgiver, though it marred and misapplied the architectural harmonies of Greece, yet rounded the arch and spanned the vault, and began to raise the dome. It was not, however, till the highest ethical ideal had long gained the professed obedience of the civilised world that dynamic architecture attained its fullest development. It did so in elevating to a great height, by the harmonious counterpoise of a multitude of opposing thrusts, a massive stone-groined roof—a sea

of petrified waves—upon delicate clustered columns, and upon high and narrow portions of amply buttressed walls, separated by wide and lofty window-spaces. The perfect development of such Gothic construction we see in such cathedrals as those of Amiens, Paris, and Bourges. There is a certain architectural beauty in mere harmony of proportion; but every rational building is erected not for mere ornament or caprice, but for an end beyond itself—to serve some useful purpose. When it does this well, and truly expresses, as every really artistic building expresses, the object for which it is intended, then it may be said to be 'good' and 'true,' as well as 'beautiful.'

The sciences of geometry and number serve further to show the great significance of harmony. The mathematician feels pleasure in exploring the complex relations of ideal space and elucidating problems of abstract number, motion, and increase. But though these sciences may, like the other arts and sciences, be cultivated purely for their own sake, yet, ordinarily, they are followed for an end beyond themselves. That mathematical harmony means 'truth,' is made the plainer the more we compare the results of such abstract science with real things, and so come to see how absolutely perfect and certain that ideal truth is, to which we may bring material things to approximate more and more closely, the more care we take to diminish the imperfections due to their material conditions. By the proper manipulation of even impossible, and what seem absurd, quantities and formulæ, we may arrive at practically useful and perfectly truthful results.

If we turn from the sciences and the fine arts to the arts which are called 'industrial,' we may still see that beauty consists in, and that goodness and truth follow upon, a due harmony and proportion between the parts of any fabricated mechanism. The beauty of a well designed sailing vessel may be perceived even by unskilled eyes, and if that of a perfect steam-engine is less generally admired, it is because much technical knowledge is required for the appreciation of its complex co-ordination and of the perfection and truth with which it may respond to the conceptions and designs of its contrivers.

It would seem, then, as if there was a beauty in everything which exists, whether animate or inanimate; for there must be a certain harmony between each object and its environment, or it could not continue in its being.

The beauty of human conduct also consists in harmony—in the harmony with which all its actions are fitly co-ordinated to that which reason declares ought to be the end of life, namely the fulfilment of duty, in which alone the word 'ought' finds its interpretation. Of course there is a certain beauty in the due exercise of each separate faculty, but it is by such a co-ordination of them as results in *following the right order* in life that perfection can be approached. Men agree in calling such rightly ordered actions 'good,' and they may, in a sense, be called 'true,' as truly responding to that conception of fit conduct which the most highly developed reason forms. But no reality we anywhere meet with completely satisfies human aspiration. Not only does our conduct fall short of our conception, but also in

the arts and sciences, as in nature, we can conceive an ideal beyond what is anywhere attained. Even in mathematical science we find that first one method of calculation and then another comes to an end, stopping short of what may be desired. We can conceive a development which should disclose the total inter-relations of gravitating force between all the bodies of stellar space. But because so little that is conceivable is attainable, we esteem none the less such soluble problems or practical results as we can attain to; nor do we care less for harmonies of colour or sound, or for natural science, because we can conceive beings with higher faculties than we possess, or a world with creatures of more complex and varied forms than those we have about us in the actual world we live in.

Let us now consider the action of the human mind in the light to be derived from the foregoing considerations. Thinking is an active process; it is one mode of conduct, and therefore its perfection must consist in the harmony with which its various actions are co-ordinated to its proper end.

But our mental activity consists of much besides thought, and is largely made up of sense-perceptions, memories, emotions, imaginations, desires, and feelings, and is very manifold. We seem to have certain direct perceptions and to attain to others by a more or less involved process of reasoning. We must frequently experience the action of other minds upon our own, and during every moment of our waking life impulses from without beat on us through our sense-organs and convey to us influences from all the world around us. We may feel without thought or

reflection on our feelings, or we may direct our attention on ourselves or our own thoughts. We may follow a chain of reasoning put before us in some book, slowly and gradually apprehending its bearings, or we may experience sudden shocks of assent to or dissent from propositions seen at a glance to be either true or false. We may consciously or unconsciously profit by associations of ideas and images which have become established in our minds, or we may, by their aid, draw explicit inferences. We unreflectively guide ourselves throughout the day concerning the simplest affairs of life by our ordinary common sense, and we accord a certain deference to the opinions of our fellows according to our estimate of their characters, the unanimity of their testimony, and their special knowledge of this or that particular subject.

Now we have seen that in all the forms of human activity before passed in review, perfection (beauty, goodness, and truth) consists in the establishment of a harmony, and we may therefore be prepared to expect that the most perfect mental action will likewise be attained by the harmonious exercise of all its various powers and faculties. But thought is not carried on for the mere sake of thinking; it has an end beyond itself—the attainment of truth—and this end is also attained by the establishment of harmony. The daily experience of all of us in small things, and the secular experience of science in great things, make the truth of this plain. Our perceptions are more clearly seen to be true according as sense-impressions of one order harmonise with those of another order, and as freshly made observations or

inferences agree with anterior observations and inferences. We may therefore anticipate that as the goodness, truth, and beauty of our mental life consists in a due balance and proportion between its activities, so the undue development of any one faculty must tend to impair its beauty, diminish its goodness, and make it more or less false to its aim. An exaggerated stress laid upon any one or any partial group of our mental powers must create a discord, and so far conflict with truth: and widespread mental discord is a sign of the times in which we live. Whatever be our belief as to what is true, we must all admit that much of English mental life is an intellectual chaos. Some teachers tell us that our intellect contradicts and must correct what our senses seem to declare to us, and yet that thought itself is but a modification of and must be tested by our sensations. Others tell us that all around us is but a modification of self, that our feelings and the realities of being are one, so that we are the unconscious creators of that universe which is in fact ourselves. On the one hand we hear that the most seemingly solid properties of matter are but the formation of mind, and on the other that all acts of mind are but the secretion of our brain-substance. Many thinkers, not destitute of intellectual eminence, deem that reason justifies them in raising their eyes towards a Being infinite in power and knowledge and absolute in goodness, while others not less intellectually distinguished regard the former thinkers as men who delude themselves by mistaking for a reality what is in fact but a magnified and distorted reflection of themselves. While some acute reasoners

proclaim that all the beliefs which men have most venerated are false because essentially anthropomorphic, others certainly not less acute contend that the beliefs of physical science, as no less necessarily anthropomorphic, are open to the very same objections, rest on unfounded and gratuitous assumptions, and lead to conclusions which are incoherent and inconsistent.[1]

Many men still defend what they regard as the solemn monitions of a divinely implanted conscience, and reverence—as essentially distinct in kind from the feelings of brutes—the sweet pathos of tender human affection and the deep heart-stirrings of unutterable aspirations after an infinite ideal. Others, on the contrary, assert that—as all our thoughts and emotions are the unconscious reproductions of ancestral feelings and desires—these seemingly lofty sentiments and aspirations are really nothing more than the physical desires of ancestral animals, so modified by altered circumstances that they come to be mistaken for something higher than the merely animal excitations they essentially are.

On the one hand we are told that all older beliefs must succumb to the further progress of the great process of evolution, while on the other it is ably argued that the same fate must attend our belief in that very process itself, since such belief must have been due to the very same irrational necessity which has produced all our previously accepted prejudices and errors.[2]

Various eminent writers proclaim that no human

[1] See Mr. Arthur Balfour's *Defence of Philosophic Doubt*, p. 304.
[2] *L. c.*, chap. xiii.

knowledge can be really true, and yet show a certain confidence in human intellect and reasoning, by making use of their intellect and by employing reasoning to show that both are untrustworthy.

A great change has indeed taken place in England during the last half-century. Even thirty years ago questions of philosophy were not the popular subjects they have now become. These questions, which have ever occupied the highest minds, but which were long confined to a select few, are now 'in the air,' as we say. There is scarcely a popular lecture or monthly magazine in which they are not referred to. Men are now daily called upon to treat as open questions what many consider to be the first principles of all reasoning and primary truths upon which, as they believe, the whole fabric of science reposes. 'Can we know anything?' 'What do we know for certain?' 'How is knowledge possible?' Such are the questions which we are again and again called upon to answer.

This change, like the other changes which progress brings about, has its unquestionable advantages, but it has also its disadvantages. If the effect of the wide diffusion of metaphysical questions is to make men really sound the depths of their own knowledge, and so really 'know their own minds,' the effect will be one to be altogether rejoiced over; but in not a few cases the result would seem to be the very opposite of this. Many men seem to know their own minds less than ever, and to have exchanged a mere absence of knowledge for an active state of helpless and hopeless puzzledom as to the declarations of their own reason. The practical

importance of the matter is obvious. In the business of life, prompt and decisive action has again and again to be taken upon a nice estimate of probabilities. But wise action of the kind will be less likely with those who have acquired a habit of trifling and dallying with certainty, who are habitually in a state of not knowing their own minds, unable to say whether they are or are not certain of the facts before them. Energy of will is scarcely to be expected where such an intellectual enfeeblement exists.

We are continually warned against the obvious danger of concluding too hastily from insufficient data. There is, however, an opposite, more insidious and less obvious danger, and it is one which our very conscientiousness may help to increase. This is the danger of not concluding when the data are sufficient—the danger of acquiring such a habit of indecision as to run the risk of being still occupied in balancing probabilities when the time for action has arrived or has even passed. An excellent remedy for this evil is to acquire the habit of exploring to its foundations, as thoroughly and exhaustively as we can, any problem to which we may direct our attention; but to do this it is necessary to have clear ideas as to what certainty is, what its criterion, and what its grounds.

Now authority is of little avail in Philosophy. Nothing is there to be accepted which is not clearly proved to the individual reason; though wise men profit by the experience of others, and men of modest minds gladly seek for instruction from distinguished predecessors. Unfortunately, however, men the

most modest are absolutely forced back upon themselves by the discord which prevails between the teachings of metaphysicians the most generally esteemed. Descartes, Berkeley, Hume, Kant, and Hegel were each saluted with a chorus of praises and happy vaticinations. Each has indeed produced important results, but not the results intended. Not only do different 'experts' disagree with declarations of certain, or of all, of these great authorities, but the common sense of mankind absolutely rejects almost the whole of them.

Thus each one of us is, however unwittingly, forced back upon his own individual mental efforts, and in presence of the objections made by the school known as Idealists, he is driven to build for himself on those internal phenomena of which he is immediately conscious. Thus also the Delphic admonition *Γνῶθι σεαυτόν*, 'know thyself,' is one especially appropriate now. To know thoroughly our own innermost selves is the process with which inquirers are compelled at present to begin.

It was otherwise formerly. In the childhood of our race and of each one of us, the attention was called forth by the actions upon us of external nature. We knew first what was without, and our attention was relatively but little directed inwards on ourselves. The senses and the spontaneous action of the intellect lead us naturally to perceive and infer, and to regulate our actions according to such spontaneous perceptions and inferences without any analysis of the processes thus naturally followed. But with age comes reflection, with reflection inquiry, and, after a time, with inquiry doubt. As one by

one our childish beliefs as to the rainbow, the music of the shell, the stars, etc., disappear, as, later, the inadequacy of our notions as to colour becomes manifest, as our youthful speculations in philosophy become untenable, and first one and then another seemingly satisfactory solution of the enigmas of existence appears to crumble away under the criticism of one or other modern philosopher, we are at last tempted to despair of ever gaining any solidly grounded and satisfactory system of knowledge, to suspect our reason and our senses as probably deceitful, and to sit down with a feeling of helplessness, in a state of vague, unreasoned-out scepticism.

Certainly in this state of things we have no 'mental harmony.' But the various analyses, from the sciences and the arts, to which the reader's attention has been called, seem to show that without such harmony we can have no perfect 'thinking' at all; and that therefore our unsatisfactory mental state may not improbably be owing to an undue prominence having been given to one or other of our psychical powers.

And no one can deny but that most modern philosophical systems do avowedly repose upon one or other faculty. One appeals almost exclusively to self-consciousness; another would rest entirely on the declaration of the senses. Descartes' appeal is to 'clear ideas;' and while many trust only what they can see and handle, others would educe their whole system from their idea of 'Being.' Hume, if he was serious and sincere in his professed views, regarded 'impressions' as the only source of knowledge. He was combated by the proclamation of an entire reliance

on 'common sense,' while 'human testimony' was the one criterion of De Lamennais and his school, and analogous one-sidedness is the bane of almost every popular philosophy of modern times.

The reader may not improbably say to himself, 'Who can hope to succeed when such eminent thinkers have failed?' Certainly he would be a bold, not to say a rash and presumptuous, man who should now venture to measure himself against these intellectual giants, and to oppose to their systems another of his own devising. What no prudent man would himself attempt may, however, be done for him by nature herself if he will humbly follow her teachings, which have been so fruitful of results in other fields. The great philosophers to whom we have referred failed because they attempted what experience shows to be impossible, namely, the task of individually building up a stable philosophy by relying upon some one or other faculty of the individual mind. Philosophy, after a long and noble struggle, has been overthrown, but the touch of mother earth will, we believe, give it a new life.

Natural Science has gained the public ear, it is time that the public began to appreciate *a Natural Philosophy*. This philosophy starts indeed from the internal world of conscious thought, but accepts and simultaneously makes use of all our means of information, external as well as internal, and endeavours to harmonise the whole. It is surely worth a man's while to try and see whether the discords which have been asserted to exist in his nature are real and necessary discords, or whether

he cannot so attune the various strings of his complex being as to elicit from them a stirring harmony which may rouse him from that state of enchantment into which the spells of metaphysicians may have thrown him, by showing that those conflicts which have been said to take place between the declarations of his different faculties do not in fact exist, and that his faculties are veracious. But no good can follow from merely trifling with such questions; the inquirer must grapple boldly, honestly, and vigorously with his subject. By so doing, however, he may discover himself to be the natural possessor of a system which is as harmonious as beautiful, and which is 'good,' because 'true.' Not, of course, that every system which is harmonious in itself, and so coherent, is because coherent, true; but that a system of propositions, each of which is seen by the mind to be evidently true, must, if they are coherent and mutually confirmatory, be a true system.

Though it is not to be expected that the majority of educated men and women should take up philosophy as a professed and continuous study, it is to be expected that every rational man and woman who is interested about, or troubled by, the doubts now widely diffused, should so far pursue the subject as to satisfy themselves whether or not truth is probably obtainable. Even should they fail in obtaining philosophic certainty, they will, after having made such an effort, at least not have to accuse themselves of undue neglect of nature's highest gifts; while if they find their effort justified by success, and can establish harmony between their spontaneous beliefs and their reflective reason, they will not only have

gained intellectual peace, but, what is all important, have obtained a firm basis for vigorous and unhesitating action.

To do this in the present day, when so many doubts have been cast over our knowledge of the external world, each man must, as before said, begin with his own internal world. He must begin by trying to know himself, and to find the ground and criterion of all certainty, so that he may be able to build on a secure foundation.

Yet to do this successfully, no very recondite researches are after all needed. It can be but necessary to examine human life and external nature as they may come first to hand under the most ordinary circumstances, supposing only that examination to be carried on with sufficient thoroughness and care. If the desired harmony exists essentially in human nature, it must be capable of being elicited, take that nature where we will. It can everywhere supply us with the lessons we seek, if it is able to supply them to us at all.

CHAPTER II.

THE INNER WORLD.

A Sussex Coast.

Can we have absolute certainty about anything, and if so, what is the criterion and what are the grounds and motives of all certainty?

George Maxwell was sitting on the beach at Eastbourne under the shade of a breakwater, or groin, reading Lyell's 'Principles of Geology.' On his right he saw the chalk-cliffs, leading on past the Wish Tower and the Meads, towards Beachy Head. On his left, beyond Pevensey Marshes, he could descry in the distance Bexhill, and further on the white houses of St. Leonards. The tide had only just turned, and the breaking of the calm sea's small waves was but slightly audible, as was the cry of a sea-gull sailing in circles slowly overhead in the gently-blowing south wind. He was lost in a reverie, wherein distinct reminiscences of the place in bygone years rose up. He was a child again, and plainly saw in imagination the shape of a particularly large castle of sand and shingle once raised against the advancing tide. Recollections of walks to what had seemed well named 'Paradise,' of the noisy arrival of the London coach, and of the mysterious charm of Pevensey Castle ruins, recurred one after the other. Suddenly the band on the pier struck up the overture to

'Fra Diavolo,' and recalled to his mind details of the first time he had heard that opera, with Miss Betts as Lady Allcash. He then noted how different were the feelings with which he years before had gone to an opera, from those he experienced when, three evenings ago, he heard 'L'Africaine' at Covent Garden, with the friend who had the night before travelled down with him, and whom he had left at the old Anchor Hotel studying Hume. He returned to his book, and considered the author's arguments as to the sufficiency of altered distributions of land and water, to account for such past changes of local climate as geology reveals. Recollecting the evidences which recent deep-sea explorations have furnished in favour of the past persistence of our existing continents and oceans, he was doubting Lyell's hypothesis, when the crunch of rapidly nearing footsteps on the shingle made him look up. As his friend put his hand on his shoulder the better to help himself to perch on the breakwater, *Maxwell* said: Do you think, Frankland, that Lyell, if he were alive, would now maintain his views as to the probable cause of climatic change in the world?

Frankland. Who knows? These are not days in which any opinion long maintains itself, and I should think he would change his. Nothing endures! Who can feel any certainty about anything when the whole world is perhaps but a set of changing appearances?

M. I see you are fresh from your Hume. Has he made you still more of a sceptic?

F. Indeed he has, for he has made me sceptical as to the sincerity of his own scepticism. I am half

inclined to believe he is all the time laughing in his sleeve at followers who take him *au sérieux*. In other respects he leaves me as he found me.

M. Whether anything endures altogether or not, things at any rate endure for a time, and I want to know what you think as to this supposed cause of the non-endurance of climate. Is there any real proof——

F. Real proof! That is a grand expression! Are there really any such things as 'proofs' at all? There are fancies no doubt, and my fancies vary pretty often. I see no certainty about anything but my own state of feeling for the moment. I feel no such certainty as to my own continued permanent existence from day to day; and as to yours, my dear fellow, I really have the very gravest doubts. For the last six months I have, as you know, been a sceptic —that is, I have a present fancy that I have been so extraordinarily constant in my views. I will only call it a 'fancy,' for can I have any absolute certainty that what seem to me to be the feelings of an enduring 'me,' may not really be those of something utterly unknown? May not all men's thoughts and feelings, if there are such things, be phenomena of some great unknown and unknowable entity? May not all life be a dream within a dream, and rather the dream of somebody else than my dream?

M. I know very well that you like to amuse yourself with dialectical gymnastics, but I do not care about talking for talking's sake, and have no talent for *badinage*. If you like to discuss the question of certainty and its foundations seriously, I am your man; if not, I would rather stroll with you on the pier and listen to the band.

F. I hate your adverb! It reminds me of those objectionable advertisements which begin 'Wanted in a serious family,' and which suggest tracts, bad dinners, and long faces, as substitutes for bank-notes, good cookery, and laughter. I, however, was quite earnest and sincere in what I said, and should like to examine the subject of certainty with you as thoroughly as it is possible for us to do it.

M. Sincerely, then, if not 'seriously,' are you not certain—absolutely certain—that you are now listening, that both your legs are not being broken, that you are not a fluid being poured into a cask, or a fish with a hook entering its gills?

F. I have already said that I have certainty as to my present state of feeling. I know, for example, that I have a feeling of a very hot sun on my back. As to this, I have the highest possible certainty—certainty, of which neither God nor Devil can either deprive me, without depriving me of my conscious existence, or deceive me about its existence while I have it. But such certainty I cannot attain about anything else whatever—not even as to my own existence, and most certainly not as to yours.

M. You seem to have a spite against my existence. Now, I have not even the faintest doubt about yours; and I quite agree with you as to the manifest impossibility that any power could deceive you as to any actual present state of feeling. As to your having a feeling, and what that feeling is, you may indeed have complete certainty. But come and sit down here with me in the shade, and tell me if you have not certainty about more than that. Are you

not certain in the highest degree that you came down here with me last night by rail, that you have not two heads, and that you are not the Empress of China?

F. Of course, I am what is commonly called 'certain' about such absurdities, but still as to them and as to my existence, my certainty is inferior in degree compared with my certainty as to my present state of consciousness, and compared with that does not merit to be called 'certainty,' still less 'the highest degree of certainty.'

M. You admit, however, that there is such a thing as absolute and complete certainty.

F. I have admitted and do admit that there is such a thing—namely, certainty about my present feelings.

M. So far so good! We at least agree that there is such a thing as absolute and complete certainty. But now, how do you know that you have a feeling? How do you know that any present state of consciousness exists?

F. I know it directly and immediately. There is no 'how' to be considered in the matter.

M. Pardon me, I admit that you have feelings directly and immediately, but not that you know that you have them (so as to say to yourself, 'This feeling or state really exists'), directly and immediately. In order to make this assertion you must, as it were, turn your mind in upon itself, and reflect on your feeling. Without this you could not say that you knew that the feeling or state of consciousness existed.

F. But to know that we are conscious of any

feeling is nothing more than to attend to it, and seems to me to be no really fresh act of knowledge. When I turn my eyes to that boat and say, 'I see a boat,' and immediately afterwards, 'I know that I see a boat,' am I asserting one fact or two? If I say first, as I now can with much truth, 'I am hot,' and then, 'I know that I am hot,' do I make two or only one assertion?

M. Certainly you make two assertions, about two distinct facts.

F. It seems so at first I admit, and it also seems that the two assertions are traceable to the operation of two distinct powers; but what is 'to see,' 'to feel,' 'to know'? Do I 'see' at all unless the act of vision rises, so to speak, into my consciousness—that is to say, unless I know that I see? Do I 'feel' at all, unless I am conscious—that is, unless I know that I feel? In this way, knowledge of the state of mind in feeling, seems to me to be an essential part of having a feeling.

M. A great deal may, I think, be said in favour of the existence of unconscious sensations, but we need not go into that question; I will only concern myself with feelings which rise into cognition. But there are several kinds of cognition. You may well ask, 'What is to know?' for the expression is an ambiguous one. I am quite sure that in very many instances, as in running upstairs, playing the piano, etc., my actions are influenced by cognitions, which, if they were ever really conscious, were so briefly and unobtrusively before consciousness that I cannot recollect them. I am also sure that in other instances I have cognitions of which I am distinctly

conscious, as that that thing is an empty shell, and I will even admit that of such a cognition as this I can make sure by a sort of tightening of my mental grasp of the object, without making any really fresh act. But when I expressly advert (1) to myself as having the perception, (2) to the object as being one really perceived, or (3) to the mental act as being one of perception, in each and all of these cases I make a fresh act accordingly as I concentrate my attention upon myself perceiving, upon the object perceived, or upon the act of perception.

F. But if we assert that it is necessary for knowledge that we should not only know, but know that we know, we should also need to know that we know that we know, and so on *ad infinitum*; so that we should never attain any real knowledge at all!

M. But I never said that the second act was necessary for real knowledge, but only for a particular kind of real knowledge. If we make up our minds to attain an indefinite series of such kinds of knowledge, we must then, of course, repeat such acts an indefinite number of times, but not otherwise; and no one is going to be so stupid as that.

F. What, then, do you take my most simple and direct feeling to be? You must admit that I have some. You do not pretend, surely, that I begin with an act of reflection, either in adult life or as a child? We begin without doubting, and we begin without reflection. Certainty must, therefore, attend the direct, single act.

M. True enough! Certainty does attend the direct act, but not the kind of certainty which you have when you say 'this present state of conscious-

ness exists.' What I am directly conscious of every instant is neither 'a state of consciousness' nor any 'self' which has that state. My direct, simple, immediate feeling (setting aside, for the moment, all question of the perception of things external) is one of self-action—in doing, being, or suffering—the simple apprehension of my active being. Not, of course, of the 'doing' as 'something being done,' or of the action as being such, but of my own concrete activity—of the fact itself, and not of the fact as 'being a fact.' The 'self'—the substantial, continuous being—is indeed, I fully admit, only deliberately perceived and explicitly recognised by reflection. But the 'state of consciousness' is itself in the very same case. I altogether deny that in a primary and direct act I know the existence of a 'feeling' or 'state' one bit more than I know the existence of the being who has the state. It is, indeed, clear to me that both the 'self' and the 'state' are implicitly contained in that direct act of consciousness (the 'self' quite as vividly as the 'state'), but neither the one nor the other is given explicitly in that direct act, nor can either be recognised without reflection—that is, without a secondary, reflex act on the mind.

F. Give me an illustration of your meaning.

M. Well, you are fond of fencing. Is it not true that in a fencing bout your attention is expressly engaged in the conduct of the contest? Yet all that time you are conscious both of your states (parrying, lunging, etc.) and of yourself as carrying on the struggle. If the next time you fence you were to divert your attention, owing to this talk of ours,

from such direct perceptions to analyse your feelings or note your underlying personality, you would, I fear, be certain to get hit pretty quickly. To perceive anything we are doing in the act of doing it (i.e. to do it consciously, and not in sleep-walking or reverie) is one thing, to think either about the feeling which may accompany the doing, or about the self, which has the feeling, is another, second kind of act. In that second kind of act we may explicitly attend either to the feeling or to the self, both of which are perceived implicitly, though not explicitly, in the first or direct act. To say that the explicit recognition of the 'feeling' or 'state of consciousness' is prior to, or has any greater validity than, the explicit recognition of the 'self,' is false in fact and contradicts what my consciousness tells me of myself. How is it with you?

F. I confess I never heard the matter put in that way before, nor do I recollect anything in Hume which I can bring against it. Of course I do not practically doubt my own existence any more than any other man does, but I was much impressed with a lecture I heard not long ago at the Royal Institution, by an eminent teacher of science, in which what I just now urged was put forward as absolutely certain and indisputable. The lecturer said that we never can know our own self except in some one or other state, and that therefore we can never really know our own substantial and enduring self because in no state of self (the only states known to us) can the substantial self be present unmodified.

M. My dear fellow, I never knew you and never shall know you except as either in motion or at rest; as standing up, or in some other posture; as with

your hat on, or with your hat off; at one time in tip-top spirits, at another time, as now, thanks to your guardian, depressed to the lowest depths! That I have never known you except 'in some state' is most true, and for the very simple reason that you always exist in some state or other, and never otherwise. Yet I know you very well for all that, and it would be not a little odd if I were to consider that I could not know you except I knew you in a mode in which you never did, and never by any possibility could, exist. An 'unmodified existence' is a pure absurdity and a sheer impossibility. No wonder, then, if our intellect does not apprehend it. Surely, Frankland, the learned lecturer who so impressed you was talking nonsense. It is curious what an effect 'nonsense' often has when delivered very impressively and with much 'unction,' as more than one professor I know often delivers it.

F. Well, I allow your answers are good as against my lecturer, and that my professed doubts as to my feelings being really those of some other being were irrational. But supposing I know that I now exist and have feelings, that hardly warrants me in having absolute certainty as to my existence in the popular meaning of the term which refers to the past as well as to the present; and how can I have certainty as to anything which is not actually present to my consciousness? It seems to me to be conceivable, however practically absurd, that though in each succeeding instant there is a 'self' with its 'feeling,' the succeeding 'selves' may be really different beings, and the prolonged continuity of existence we commonly take for granted, be a mistake.

M. The unreasonableness of such objections as you have just made comes particularly home to me at this moment. When you joined me I had been thinking over all sorts of events of my childhood and youth, and, to own the truth, the waltz that band is now playing calls up certain recollections which are as vivid as any feelings derived from things I see about me and serves abundantly to convince me of the continuity of my existence. But in sober truth, are you not as really certain that I am now answering a remark you made a moment ago, as that you have a present feeling of sitting in the shade, and are you not as really certain that you came down with me to Eastbourne last night as that we are at present having a conversation? Unless you trust your memory you cannot act reasonably, you cannot talk, or even think rationally. To do either you must be able to recollect the earlier parts of your speech or train of thought.

F. But is it not conceivable that the new existence, the new 'self,' of each succeeding moment, may be impressed with influences from the immediately antecedent self and more remote 'selves' of the preceding moments, which thus accumulating in the later 'self' may seem to it to be a memory of its own past, when it may really be nothing of the kind, but a mere record of the past of antecedent existences?

M. My dear Frankland, I am persuaded of one thing, of which I think there can be no question, and that is, that we are so constituted as to be able to commit all sorts of ridiculous and perverse acts, intellectually and otherwise, if we will; and if a man is so unfortunate as to persist in thinking he is some-

body else, or in doubting whether he is at all, no science is of course able to control him. But is not this supposition of yours as to a succession of 'selves' —like the kings in Macbeth's vision—a gratuitous absurdity and a multiplication of difficulties devoid of any evidence for their existence. Good sense and sound judgment consist in wisely estimating evidence, and is it not much less likely that there should really be this multiplicity of beings—these different 'selves,' the existence of which disaccords with your conscious memory, than that, as your memory avouches, a single being should recollect its own past acts? But in an 'act of memory,' as in the case of a 'present state of consciousness,' the direct act is a perception of past 'self-action'—in being, doing, or suffering—and it is only by reflection that we explicitly recognise our own past existence therein, or the 'states' in which we then were. If we can trust the analysis of our direct perception of our present activity into 'self' and 'states,' we may trust the analysis of our direct perception of our past activity into 'self' and 'states' also. If you trust neither the one nor the other, then you cannot logically make one single affirmation, or even, as I before said, coherently think.

F. Still you must admit that memory is not only often very deficient, but even sometimes defective, and that people not only doubt as to whether they had or had not some particular past experience, but sometimes feel confident they have had it when in fact they have not. Therefore it must be admitted that our certainty as to memory is less trustworthy than is our certainty as to our present experiences.

M. If you mean that individuals may make mistakes, that is indeed obvious, and is an evil which no philosophy can pretend to render impossible. It is also quite true that our knowledge as to many past events is not so absolutely certain as is our knowledge as to certain present events. Nevertheless our knowledge of portions of the past is as certain as that of the present, for we cannot really know the present to any greater extent than our direct perception of self-action, without trusting our power of memory as to the past. We cannot know either a present feeling as such, or the fact of our own existence, without trusting the faculty of memory.

F. This we may do on the ground of experience, since the veracity of our memory is capable of being again and again confirmed by it.

M. The trustworthiness of particular facts of memory is one thing, the veracity generally of our faculty of memory is another. Occasional mistakes by no means imply that memory is to be generally distrusted, and, as I have already pointed out, we must rely on it or cease to be reasonable beings. But memory by no means vouches for the past with the same force in all cases. Some things I know I have forgotten, and some I cannot be clear about, but as to others I may be securely certain. My present state of mind tells me that there are some events of my past life which I know with absolute certainty. As to experience vouching for the veracity of the faculty of memory, how can you have experience if you do not already trust that faculty? Particular acts of memory may of course be confirmed by experience if the faculty of memory be already

confided in. But you must trust your memory in every such instance. How can you know you ever had an experience except by trusting your memory? You would repose confidence in your present act of memory because in past instances its truth has been experimentally confirmed, and you know that it has been so confirmed by trusting your present memory! Evidently, if we cannot trust our present memory, all past history is for us a dream, and the whole body of physical science is nothing better. Our absolute certainties as to the past and as to present experiences (beyond feelings actually being at the moment felt) rest upon the same basis, and if we may trust, as we must trust, our reflective consciousness at all, we must also trust our faculty of memory, upon the veracity of which the very use of our reflective consciousness depends.

F. Let us agree, then, to trust both as certain. It is a deeper and more fundamental question which most interests me. We may agree that we are certain of this or of that, but is there any true common basis of all certitude, and if so what is it? You may recollect that when, just now, you asked me my opinion about Lyell's views, and spoke of 'proof,' I demurred to there being any such thing as 'proof' at all. This was no idle or petulant exclamation on my part, but was the expression of a real doubt as to the possibility of escaping a fundamental begging of the question and an inevitable reasoning in a circle as regards all things.

M. Before considering the question as to the ground and criterion of certainty, I should like to settle two preliminary points. After what we have

said about the existence of 'self' and the trustworthiness of 'memory,' you will admit that we can talk so as to understand each other, and, since you are not arguing with me in joke, you will admit that there is such a thing as reasoning and arriving at some conclusions by means of it?

F. Agreed.

M. In so far as you admit these two points, and also that you know your own existence, and that memory is generally trustworthy, you are and can be no sceptic, and my object now is to try and show you that it is a great mistake to regard philosophical scepticism as a specially intellectual frame of mind. You are really as acute-minded a man as need be; but when you declare yourself to be a sceptic, you practically declare yourself a foolish fellow.

F. Mille grazie! Obligato!

M. Of course it is in a man's power, as I before said, to act irrationally if he will. I freely and frankly concede that men may bring themselves to doubt or deny the plainest truths, the evidence of their senses, the reality of truth or virtue, and even the existence of their own bodies and minds. We may get into a diseased condition, and if a man has done so, and really thinks he does not know whether he is not a tree or the rustle of its leaves, or doubts whether there is such a thing as rational speech, or whether words can be used twice over by any two people in practically the same sense, then it is no use talking to him, and all reasoning is impossible. Such scepticism is absurd, and the proper remedy for it is not argument, but physic or change of air. But if on account of his very absurdity we cannot

refute him, neither is he able to defend his own scepticism. Any attempt on his part to do so shows his real confidence in reason, in language, and even in truth, and thereby implies his belief in the very things he would verbally deny. Such a system, therefore, practically refutes itself, by rendering its own defence and propagation impossible. It cannot even be believed, since to believe anything is mentally to affirm it to be really true, and the system forbids any such affirmation. But a man who affirms what his system forbids him to affirm, and declares that he believes what he also declares to be unbelievable, can hardly complain if he is called foolish. It is well distinctly to note this fact, because all premisses which necessarily result in such conclusions are disproved by the process of *reductio ad absurdum*. No reasoning can be true which inevitably ends in absurdity. Instead, then, as I said before, of Scepticism being an exceptionally intellectual state of mind, it is an exceptionally foolish one, and not only that system itself, but every position which necessarily leads to it must be rejected as essentially unreasonable.

F. You seem to forget that all you say now was intended to be preliminary to a reply to my question as to the possibility of really proving anything, and yet you bring in your *reductio ad absurdum*, which is one of the processes which has, if possible, to be justified. You were speaking about the probable causes of climatic change. Now I admit that we may argue on this subject from known laws of heat, from observations as to existing co-existences of climate and land-distribution, from evidences as

to similar past co-existences, etc. But in the first place, no observations or experiments can logically prove any universal law, and whatever line of argument you follow up, you must ultimately rest on mere unproved assumptions. On such assumptions even the reasonings of Euclid rest. Yet are we as rational men to rest on arguments the bases of which are confessedly groundless? Scripture tells us to 'prove all things,' a precept as wise as the assertion that 'from him who hath not shall be taken away even that which he hath' appears logical or just. It seems to me that we live in a world which is as irrational intellectually as it is ethically imperfect, and that therefore men who would be altogether wise or honest have no business whatever in it. Our best psychologists tell us plainly that we must begin with a mere assumption; but I, for one, refuse to accept or believe anything which cannot be shown to be true to my own satisfaction, and as it seems that nothing can be so shown I am forced into a position of scepticism But my scepticism is not of that active, absolute character which you, I own justly, stigmatise as self-refuting and therefore absurd, but a simple negative and passive absence of all conviction.

M. Excellent! I only wish all controversialists showed as earnest a spirit as you do now. I admit that your purely negative scepticism is not self-contradictory as long as it refrains from all attempt at self-justification, and I also admit that there is perfect truth in what you say about the necessary limitation of every process of reasoning. But though you deny, at present, the possibility of

proving ultimate propositions, you must admit, since you argue at all, that if certain propositions be taken for granted, we can from them deduce other propositions, so that there may be proof in the middle if not at the ultimate foundation of an argument.

F. Certainly, except in so far as in every process of syllogistic reasoning there is a fallacy. Thus in the old, stock example—'All men are mortal. Socrates is a man, therefore Socrates is mortal'—whoever has said that 'all men are mortal' has really said that 'Socrates is mortal' also. The so-called 'conclusion,' therefore, is a mere repetition of part of the major premiss, 'all men are mortal.' There is here no inference, but only a restatement.

M. A word or two as to this matter in passing. In saying that any object belongs to a certain class (as, that a whale is a beast), you certainly do not explicitly advert to all the various characters of the class to which you refer it. But you may turn back your mind and recognise the fact that the object, inasmuch as it belongs to that class, must have some particular character (as e.g. that a whale, being a beast, must have warm blood) not before explicitly adverted to, and therefore not actually known. Therefore, you do by this process come to have a new fact present to your consciousness, and so the conclusion of the syllogism does impart knowledge, knowledge which is brought to your mind by explicitly recognising a truth implicitly contained in the assertion that the object in question belonged to a class having certain attributes, and this bringing out into distinctness of what was before latent, is a process of

inference. Thus in looking at that fish, I may not know that it has a backbone—that is to say, I may not know it explicitly—but on consideration I may remember that naturalists have classified it under a certain group of animals so characterised, and then by a second act of memory I may call the fact to mind, and so come to know explicitly that it has such a structure.

F. Still you admit that the major premiss does contain the conclusion implicitly.

M. But only implicitly, and a person in knowing that premiss can no more be said to know the conclusion, than a man acquainted only with the definitions and axioms of Euclid can be said to know all the propositions relating to circles and triangles which are implicitly contained in such definitions and axioms. There would be much more weight in your objection if the major premiss were always or even generally a truth arrived at by an induction in which every instance had been examined—a complete induction. But such is rarely the case, and in some sciences, and these chiefly the exact sciences, never so. In most cases we arrive at the general principle (the major premiss) from one or two instances. Thus no one can pretend that we know 'that the angles of a triangle are together equal to two right angles' by a complete induction—by an examination of all existing triangles. The examination of very few suffices to make us aware of the general law. If, then, a certain figure is presented to me, and I am asked 'Are its angles equal to two right angles?' I cannot answer the question from any direct and immediate perception I have of the figure as a

figure, but only indirectly and mediately through knowing whether or not it is a triangle. In this case, then, it is by a major premiss that I know the conclusion. There is yet another consideration. It sometimes happens that an abstract general principle is more evident than a concrete example. Thus, suppose I am inquiring whether some particular act in which the circumstances are very involved would be right. I may be dazzled by good results to many people which I see would flow from it, but as I examine it I see it would be essentially an ungrateful act, and my perception of its relation to a general principle condemning ingratitude enables me to make a clear judgment against doing it.

F. It is after all a somewhat roundabout way of getting at the truth.

M. It is, and this process of juxtaposing propositions to render implicit truth explicit, would nó doubt be unnecessary if our intellect were of a much higher order, so that we could see, simultaneously and equally well, the implicit truths together with the explicit ones with which they are connected. But while we have the imperfect natures we have, we must be contented with the roundabout, though practically sufficient, method expressed by the syllogism. However, since you concede that some propositions which are not fundamental may somehow be proved, how do you manage it? For example, from your knowledge of English history and character you no doubt feel you may safely conclude that there is no danger of the Queen suddenly dispersing Parliament by an armed force

and sending the present Ministry to the Tower, but how do you arrive at that inference?

F. By a complex combination of other inferences with observations which are essentially similar to, however superficially different from, those by which I know that the angles at the base of an isosceles triangle are equal. It is impossible, it seems to me, to have evidence greater than that which we have for the several steps by which we arrive at that mathematical conclusion. I would believe anything for which an equal amount of evidence could be adduced.

M. But the whole series of arguments reposes upon certain axioms, namely, the first, third, eighth, and tenth. How do you feel about these? To begin with the first: 'Things which are equal to the same thing are equal to each other'?

F. That is one of those propositions which must be accepted without proof in order to sustain the argument. There is no possible proof of it, and therefore it seems to me unsatisfactory.

M. I think it seems unsatisfactory to you because it is expressed in an abstract way. You know that our two walking-sticks are, roughly speaking, of the same length. Well, then, you see that this piece of timber in the breakwater is just as long as my stick is. Is not this enough to make you absolutely certain, since you know the equal length of our two sticks, that the piece of timber is also just as long as your stick is? You see this clearly enough, and so you see the truth of the axiom in this concrete example—for the axiom is but a general statement of all sorts of possible examples. You say you do not like to

believe anything which is not proved, or for which you see no good reason. Do you not really mean by these expressions that you will not believe blindly?

F. You have just hit it. I am as willing as anybody to believe anything for which you can show me a good reason, but is not the believing anything without any reason at all, the same thing as to believe it blindly?

M. I should be the last man to ask you to believe anything blindly, but I think your objection is really due to a prejudice some persons entertain owing to their using the word 'reason' ambiguously. To believe anything without an antecedent process of reasoning is one thing; it is quite another to believe it without good grounds.

F. But is not almost all our knowledge, if not all, gained by inference? We are taught by psychologists that even our perceptions of trees and stones are really inferences. What 'good grounds' can we have except inferences? Do we not see things the more clearly according as the reasoning processes concerning them are, as in Euclid, most clear and simple?

M. That is just it. Most of our knowledge is gained, as you say, by inference, and it is on this account that we have come to associate the 'inferred' with the 'not blind,' and to think that everything we believe without proof must be believed by us blindly; and, on the other hand, that we do not believe blindly that which comes to us as the result of a reasoning process. But surely if it is not blind to believe what is evident to us by means of something

else, it must be much less blind to believe that which is directly evident in and by itself! Of course I am as aware as you are that the process of inference must stop somewhere—that everything cannot be proved—and that all our knowledge must ultimately repose on propositions which are unproved and unprovable. Where I differ from you is in regarding these latter not as being groundless because they are not inferences, but as having the greatest conceivable amount of evidence in their favour. In this way our knowledge may stand securely, though its ultimate premisses are unproved and unprovable, since they are self-evidently true.

F. And what is thus evident?

M. The very axiom which, expressed in general terms, gave validity to that proof as to the equality in length of your stick and the breakwater timber, the force of which you saw and which dispensed us from the need of bringing the stick and timber together. The conclusion of a proof is also evident when you understand and feel the force of its 'therefore.' Evident to you also is your own self-conscious existence and that of the world around you. A multitude of truths are evident, and notably so is the proposition that 'nothing can both be and not be at the same time and in the same sense.'

F. Would you then take the test of all truth to be nothing more than a mere fancy—a purely internal feeling of the individual? That is not the way in which physical science has attained its many triumphs. It has attained them because it has always experimentally tested our persuasions by means of the real qualities and positive actions of things, as

revealed to us by our senses. Therefore, in so far as our own powers are valid tests at all, it is to our *senses* that we must in the last resort appeal. It is they which tell us whether objects observed and experimented on fulfil or contradict our anticipations. It is, then, the sensations which we derive from material objects which are both the source of all our knowledge, such as it is, and our only supreme and ultimate standards of credibility and grounds of belief.

M. I fully concede to you the enormous value of our sensations, and that it is by and through them that all our knowledge is initiated. I will further grant you that we cannot even imagine anything of which we have not had some sensible experience. I fully agree with you as to the necessity of making all possible use of observation and experiment, and of thus verifying our deductive reasonings. Nevertheless, in the last resort, when we have done observing and experimenting, how do we know that we have obtained such results as we may have obtained through these processes, save by the intellect? and how but by it do we judge between what may seem to be the conflicting indications of different sense impressions? Nothing could be more foolish than to undervalue the testimony of the senses; and mine tell me at this moment that we must soon change our position, the tide is coming in so fast. If you disputed what I say I should appeal to your senses to confirm me; and the senses certainly are a test and cause of certainty, but they are not *the* test of it. Certainty is not in sensation, though sensation is so constantly our means of acquiring it. Certainty belongs to thought, and to

thought only. Self-conscious, reflective thought is then our ultimate and absolute criterion. It is by that only that we know we have feelings at all. Without thought we might feel, but we could not know that we felt or know ourselves in feeling. Thus, you see, I am not so absurd as to harbour any distrust of my own senses. On the contrary, I firmly believe that, the certainty of which I obtain through and by my senses, though that certainty itself is not in them. Our ultimate appeal and supreme criterion is the intellect, and not sense, and that act of intellectual perception which is thus ultimate, we may call 'intellectual intuition.'

F. Do you mean to say then that I am not to trust the inferences of reasoning as much as this 'intuition'? You have put down my preference for inferred truths to the mere effect of an unconscious association which has been formed in my mind between the ideas 'inferred' and 'not blind.' Is not this 'intellectual intuition' you cry up, only another instance of constant association and is not any proposition which thus seems to you absolutely certain, merely a proposition the contradictory of which you cannot conceive because you have never had any experience of it? You must I think allow that such may be the case, since you have just admitted that nothing can be conceived which has not been experienced. Your boasted intuition then, if I am right, is a mere impotence, and can prove nothing. It is upon just such a mere impotence that Herbert Spencer bases all his reasoning, which therefore seems to me fundamentally unsatisfactory. His fundamental proposition, which he calls his 'universal

postulate,' is 'every proposition the negation of which is inconceivable is true.'[1]

M. In the first place, let me remind you that I have already admitted the certainty of the conclusion of a process of inference rightly drawn; that is one form of intellectual intuition. But I must correct you when you say I admitted that 'nothing can be conceived which has not been experienced.' What I said was that 'nothing can be imagined which has not been experienced.' There is a vast difference between our powers of imagination and of conception, as was long ago pointed out in a controversy between Mill and Whewell, and as G. H. Lewes has admitted. He tells us,[2] 'That which is unpicturable may be conceivable, and the abstraction which is impossible to imagination is easy to conception.' This is most true. Conception is not tied down to experience, though imagination is. I can very well conceive that there might be a sixth sense, which I most certainly never experienced, but I cannot imagine it. Many things can be conceived of which cannot be imagined. I cannot imagine my own annihilation, but I can conceive it, and many persons in England now affirm their belief in their own future annihilation. I cannot imagine a being living in a world where there shall be length and breadth but no depth. Yet Professors Helmholtz and Clifford have not only said that they could conceive of such beings, but have even drawn out what they assert to be the necessary laws of their perceptions.

[1] In order to meet an objection raised by Mr. Mill, he modifies it so far as to say that his test applies only to propositions which are undecomposable.

[2] See *Problems of Life and Mind*, vol. i. p. 420.

F. But these two eminent men have adduced those laws for the very purpose of disproving that we can trust such seemingly certain truths of which you would make so much. Their very object is to show that mathematical axioms have not that truth which they are so commonly believed to have. These authors show this by demonstrating that for beings living in a space of only two dimensions, on the surface of a sphere, a straight line would not be the shortest, and that their perceptions as to parallel lines, etc., would all be different from ours.

M. Surely the fallacy thus put forward by these men, eminent though they be, is most transparent. Unless geometrical axioms were certain truths, it would be impossible for these professors to declare as they do what would or would not be the necessary results attending such imaginary conditions, and, as they say, 'develop them analytically with perfect logical consistency.' How could they certainly declare what perceptions such conditions would certainly produce unless they were themselves absolutely certain of the validity of the laws regulating the experiences of such beings, and of the certain truth of their own perceptions concerning the actions of such laws?

F. But you have not replied to my objection as to the possibility of your intellectual intuitions being mere results of mental association, such as has made me, you say, associate the 'inferred' with the 'not blind.' If they are no more than that, then they must, as due to a mere mental impotence, be fundamentally unsatisfactory, like Spencer's universal postulate, 'Every proposition the negation of which is inconceivable, is true.'

M. As to that universal postulate, I must say I think you are quite right in saying that reasoning based on it must be fundamentally unsatisfactory, because avowedly based upon a mere impotence. But our intellectual perception of certainty has a better foundation than Mr. Spencer accords it. The fact is, he fails to distinguish between two kinds of inconceivable propositions, namely, between (1) those which cannot be conceived owing to mere negative impotence and defect; and (2) those which cannot be conceived because they contradict what we positively and actively see to be certainly true.

F. Give me examples of these.

M. Well, as an example of the first class of inconceivabilities, those due to impotence, we may take our inability to conceive what may be the shape and arrangement of the mountains of that side of the moon which is ever turned away from the earth. An example of the second class of inconceivabilities, those due to active power, is that of our inability to conceive a whole to be greater than its part, or that a thing can at the same time both be and not be. Therefore Mr. Spencer fails to note two utterly different classes of judgments; namely, (1) those which are negative, and simply deny that a given proposition can be conceived; and (2) those which are positive, and affirm that a given proposition is certainly true on account of its own self-evidence, and not merely because its opposite is inconceivable. On the contrary, its opposite is inconceivable because the proposition itself is positively seen to be absolutely true.

F. But are there such propositions? You have just now mentioned the principle of contradiction—

that 'nothing can at the same time both be and not be,' and I should not wonder if you were to go on to represent that as the most fundamental of all truths; and yet its validity as an ultimate truth is denied by Herbert Spencer, who makes it depend on his universal postulate.

M. That he does so is true, but it certainly is no less strange than true, for while denying it he unconsciously affirms it.[1] He affirms it also in asserting his ultimate test—our inability to dissever in thought two conceptions; for supposing we know that we have tried to dissever two such conceptions and failed, how can we be certain that we have not at one and the same time not tried, and yet succeeded, except upon the very principle of contradiction itself? If we are merely to believe, as Mr. Spencer would have us, that it is impossible for the same thing to be and not to be on ground that we cannot conceive the opposite, then we may ask with Mr. Balfour how do we know that we cannot conceive the opposite?[2] Does this second proposition require a warrant? Then, according to Mr. Spencer, that warrant must be that we cannot conceive the opposite, and this proposition and all its successors will also require similar warrants, and so on for ever, without our ever reaching a foundation. If the second proposition does not require a warrant, why does the principle of contradiction require one? I am quite as certain that it is impossible for the same thing both to be and not to

[1] See his *Psychology*, vol. ii., pp. 424 and 425, from 'But even' to 'invalidity.'

[2] See his *Defence of Philosophic Doubt*, p. 201. See also p. 240.

be, as I am that I cannot conceive it to be and not to be. The principle of contradiction is indeed a fundamental one, for if it is denied or doubted, all certainty and all knowledge are at an end, while its truth is incapable of demonstration, and rests exclusively on its own self-evidence. Its truth is constantly assumed by us in ordinary speech. Are you not absolutely certain that now the band has walked off the pier, it is not still playing there? Beneath every such certainty lies the principle of contradiction. Therefore, that quality which, for want of a better name, I will call 'evidence,' is the supreme test of truth. No certainty can be greater than that we thus obtain, and we cannot even conceive any greater certainty. On that foundation we may securely build, while if we reject it we are logically reduced to the condition of idiots.

F. Can we so build? I wish I felt sure we could! It seems to me that your whole system is as baseless as Spencer's. You, in fact, assert the principle, 'Whatever is evident is true.' A fine principle! What follies are not then true, what absurdities do not some people think evident? But anyhow your principle itself is not evident—that is quite clear. It certainly is not what metaphysicians call an *à priori* truth. It is not an analytic proposition. 'Evident' means 'clearly seen.' 'True,' I suppose, means 'agreeing with reality.' Now who, by analysing the expression 'clearly seen,' could ever get 'agreeing with reality' out of it? I deny altogether the truth of your principle.

M. As to 'analytic propositions' I will say something in a minute or two; as to 'truth' I agree

with you that it consists in a real agreement between thoughts and things. My belief that the sea will be up to us directly is so true, that if you please we will go and finish our chat on the parade. In what you have said about truth you have affirmed a very important matter. 'Truth' being an agreement between 'thought' and 'things'—between some external existence and the intelligence of some being who knows of that existence—if you and I have, as we know we have, the power of knowing anything to be true, we must have the power of knowing things external to ourselves—what metaphysicians call objective reality. Thus it is an objective fact that the sea has now reached that spot where we sat, and that it has done so quite independently of your existence or mine.

F. You are touching upon the question as to the reality of an external independent world, and dinner is too near for us to go into that matter to-day, so I will waive at present any idealistic objections I might urge, and merely enter a *caveat* against the final concession that we really know anything whatever objective.

M. I agree to defer the question of idealism till our next discussion on the very realistic ground of the good dinner we have ordered, but allow me just to remark, without going into the question as to the external world generally, that you have already admitted you have really a knowledge of objective existence.

F. Indeed! How so?

M. In what you have admitted about memory! It is astonishing how few people reflect upon the

wonderful nature of this faculty they so constantly use. Yet it enables you and me to know events that once really happened, and to recollect objects separated by more than a quarter of a century's interval from our present consciousness. We thus know now, real existences, which are objective (or external to us) but of which our senses can tell us nothing, for our senses can no longer get at them and they can no longer affect our sense organs. The facts of memory, then, imply that each one of us has the power of knowing with certainty past real existences not present to the senses. Observe, I do not simply mean that events in our past lives affect our present conduct—that may be said of a burnt dog who has come to dread fire—I mean that we have now the power of knowing past events, as events which happened formerly, the past as past, and ourselves as having most certainly lived through that past. Everyone, then, who trusts his memory at all, practically affirms that he has a power of certainly knowing objective truths, that is real relations of real things which will continue the same—save for his recognition of them—after he may have ceased to exist and which are independent of his being.

F. How will you apply this to the support of your extravagant assertion that 'Whatever is evident is true?' I do not see how my remembering or not remembering anything, can give the slightest support to that assertion's unstable foundation. I repeat, your principle as to 'evidence' is not itself evident, and is not, I believe, true.

M. You would be quite right if by the term 'evident' I merely meant a fancy or feeling of the

mind, but I meant much more than that. When I say 'evident,' I refer to external as well as to internal conditions. That we can know objective external truth is manifest from memory, and now you will see how what I just now said about memory, bears upon the truth of my principle about evidence. When I say that anything is 'evident,' I mean that it has itself a real quality which corresponds with our mental perception of its evidence. It is that real quality in the thing itself which is the cause of its being evident to all competent minds. It is a condition (or law) of things as well as of thought, and this condition or quality of things themselves, thus corresponding to our perception of their evidence, has been spoken of by some metaphysicians as 'objective evidence.' The coincidence of that quality or condition of a thing (objective evidence) with our mental perception of its evidence (subjective evidence), makes that thing perfectly, or simply evident. Now that 'everything which is at the same time both evident to our minds and in itself also, is true,' is a proposition which *is* evident. For truth is the agreement of thought and things, and an evidence in thought which agrees with an evidence in things, must therefore be true evidence. That 'whatever is both subjectively and objectively evident, is true,' is then a self-evident truth.

F. But how can we know that anything is objectively true? We cannot get outside ourselves or see things except as they appear to us.

M. We have agreed to defer the question as to Idealism till our next discussion. If, then, you will for argument's sake allow to-day that the common

persuasion of mankind is right, and that we really do know the external world—each other, that sea and pier, these people on the parade—and know that they exist independently of us, then it follows that we do know objective reality, and are enabled to test and correct apparent subjective evidence thereby.

F. I am very much interested in this question, which is new to me and seems more important than anything we have yet discussed. Allowing for to-day that we do really know the external, material world, what then ?

M. Then you must allow that we really know objective facts about external things, as, for example, that I know I have one walking-stick in my hand and not half-a-dozen, that it is strong enough to bear a good weight, that it is not a musical instrument, and that I cannot eat and digest it. I know, then, that there are certain objective qualities and relations between things with which my own conceptions accord and correspond. Moreover, if a thing seems subjectively evident to me—as, by my internal feelings, that it is half-past five—and something occurs to make me doubt if that apparent subjective evidence is accurate, for example, the apparent sound of the six o'clock dinner bell, I proceed to test it by comparing the objective relations of other things—the position of the sun, the town clock, etc.—and so make subjective evidence accord with objective reality.

F. These concordances of objective and subjective relations are rarely adverted to!

M. Nevertheless they are implied in every pro-

position about external things known to us. Thus, when I say 'a negro is black,' I affirm a conformity between the external thing, 'a negro,' and the external quality, 'blackness.' I also affirm a conformity between those two external entities and my two corresponding internal concepts; that is to say, I affirm that there is really an external thing corresponding to the term 'negro,' and an external quality corresponding to the term 'black.'[1] Besides these assertions I also implicitly affirm a correspondence between the subjective judgment and the objective co-existence. We may term those objective qualities and conditions which thus correspond with our thoughts, 'objective concepts,' and it is convenient to do so since they are the really existing things in the external world, to which our corresponding 'subjective concepts' answer. They are that in an object, which corresponds to an abstract idea. If there were not objective concepts thus corresponding with our subjective concepts, not only all physical science, but even all reasoning between men, and all intellectual intercourse must come to an end. That we do recognise 'truths' as referring to conditions of things as well as to affections of our minds, is shown by the fact of the perfect confidence we feel that evident truths will practically answer when acted on: as, for example, that we should take fewer steps in going from the Marble Arch to St. George's Hospital by walking straight across Hyde Park than in going round by Park Lane. Not only the discovery of Neptune, but the prediction of every eclipse, shows the objective

[1] Not, of course, that 'blackness' can exist apart from some external thing which is black.

character of self-evident truths and that the axiomatic certainties which the mind perceives, are objective qualities of things (objective concepts) no less than truths evident to the mind.

F. I think I see now what you would understand by an analytic truth. It has hitherto always seemed to me that analytic judgments *à priori* (being judgments in which the predicate is really contained in the subject) could never really teach us anything more than the meanings of words. But of course, if there really is this correspondence between subjective and objective truth, I can well understand how *à priori* judgments may convey new knowledge by analysing one's *objective* concepts, and so bringing out into explicit recognition truths which, though in reality implicitly contained in the corresponding subjective concepts, were not seen to be so contained in them. Nevertheless, I do not see how we can successfully guard against the danger of considering as both objectively and subjectively evident, things which, in fact, are only subjectively evident.

M. As to analytic judgments *à priori*, you have just hit upon my very point, so we are there at one. As to guarding against the danger you refer to, I have already plainly said that no philosophy can pretend to obviate all human error and infirmity. There are two points, however, I should like you to note. One is that though our perception that 'nothing can both be and not be at the same time' is subjective, yet it nevertheless declares its own objective validity as does our perception (by memory) of some or other past state of our own

existence. The second point I would have you note is that if we have reason to suspect we are deluded as to a fact seemingly remembered, or seemingly evident, we can reasonably appeal to the judgment of other men, when once we have recognised that we can know objective truth at all. For the direct judgments of men are much clearer than are their reflex judgments—than their judgments about their judgments. Our powers of perception are very clear and luminous as long as they are applied to external objects, but greater or less obscurity inevitably attends the analysis of our mental activity itself. In such analysis we attain, indeed, the maximum of certainty (for nothing can be more certain than our knowledge that we are thinking when we advert to it), but we nevertheless find ourselves provided with a minimum of light. The human mind is evidently fitted rather for external examination than for internal contemplation; and its faculties, though admirably arranged to impel us on and aid us in the study of the world about us, do not offer themselves as convenient objects on which we may reflect. It follows, then, that we may reasonably—when once we have seen that we can know objective truths—pay great respect to the direct intellectual perceptions of very many generations of mankind as enshrined in language, and recognise in its terms the signs of objective no less than of subjective concepts.

F. I admit there is great force in what you say. Still you do not pretend to be able to afford me a complete guarantee against self-deception, and I have therefore an uncomfortable feeling of distrust, and possible mistake, even as to propositions which

seem to me to be what you would call both objectively and subjectively evident; for their objective evidence can only be known to me subjectively, and thus I must rest ultimately in subjective evidence after all.

M. I quite understand your feeling, but I am sure it is an unreasonable one, allied to that vague general scepticism which I before said was to be met rather by medicine than by argument. If you accept, as of course you do, the teachings of physical science, you must admit that the success of scientific prediction shows we can be certain of many things.

F. But it seems to me so difficult to understand how we can get outside ourselves, as it were, and so apprehend the objective evidence of things!

M. Is it less wonderful how we know other matters—ourselves, our own past, each other, the force of reasoning, etc.? All knowledge is to me wonderful—most wonderful!—and I do not pretend to understand how it is I have any kind of knowledge. But because I do not understand how it is possible for me to know you or my own past, I never doubt the fact that I do know both you and my own past. Similarly, I do not know how I know that anything has an objective character corresponding with my subjective certainty about it, but I never, on that account, doubt that in knowing that, if my coat is torn in two it cannot at the same time be whole and entire, I know what is true as to that real, external, independent object—my coat—as well as what is subjectively evident in my own mind.

F. Is it not possible to conceive some other and

more satisfactory basis for our knowledge than that which Nature has given us ?

M. I, at any rate, cannot conceive such. I do not see how even the Almighty himself could—without making us different beings from what we are—give us higher or more satisfactory certainty than He has given us. For suppose He had provided some external criterion of certainty, indefinitely more perfect than anything we know or can conceive, it is nevertheless plain that we could only make use of it through a subjective knowledge that it had this character. Moreover, the mind would have to be certain as to the very existence of the supposed criterion, and it could only know this through the evidence of it in the mind itself. It is plain, then, that nothing external—no common consent of mankind, common sense or testimony—could ever supply the place of an ultimate criterion of knowledge, since our own mind must be the judge as to the existence and value of any such criteria. The principle of evidence, then, is one which is really ultimate, and must be accepted under pain of complete intellectual paralysis. It is incapable of demonstration, since it depends on nothing else. It is constantly assumed unconsciously, and is acted on confidently by everyone who reasons. We conform to it without thinking about it, but if we reflect on it we see three good reasons for assenting to it:—(1) The spontaneous and natural tendency of all men constantly to conform to it; (2) the destruction of all our knowledge, and the impossibility of thinking logically at all if we do not admit the legitimacy of the criterion; and (3) the fact that by admitting it, we have a foundation

for all science, and an orderly universe of external existences—harmonising with each other and with our perceptions and thoughts—takes the place of a chaos. By accepting it we can advance in science and successfully predict.

F. In asserting this combined objective and subjective evidence as the ultimate criterion of truth, do you make it the only criterion? You just now spoke somewhat slightingly of 'common sense' and 'human testimony,' and certainly nothing can well be more senseless or mendacious than some assertions in defence of which they are cited. The senses, you will not deny, often seem to deceive us, and our reasonings are again and again mistaken. So even if I admit, as I suppose I must, your criterion of truth—simple evidence—it seems, nevertheless, that we have small chance of avoiding error considering our constant exposure to it from so many sources.

M. What is that newsboy crying? 'Death of the Prince Imperial!' I hope we have false testimony here at any rate. Let us get a paper.

F. It is told circumstantially enough. I do not think it can be a fabrication. I fear it is true.

M. If all the papers continue to affirm it and to give further and further details for a whole week without anyone contradicting their assertions, you will not then hesitate to believe it?

F. Of course not. I shall feel certain about it.

M. Absolutely certain?

F. Well, as practically certain as one is about most things. Of course, it is just possible that elaborate falsification or mystification might have been contrived.

M. Agreed. But you cannot so doubt the existence of Port Natal, nor that the Crimean War —where your father lost his life, and appointed your present guardian—really took place. As to these things, can you not admit that you have absolute certainty—that you do not entertain any kind of real doubt or suspicion about them?

F. Yes, I own I am certain about these things. I only wish the guardian business was less certain!

M. You see those girls coming home from their archery meeting. Would you believe that every one of them had to-day shot without taking aim, and yet hit the very middle of the bull's-eye? Would anybody amongst the people about us believe that an arrow flew into the bull's-eye of itself, without having been shot by anyone? If I had a quantity of printers' type here, and threw it on the ground, would you or anyone about us fail to be certain that the letters would not so fall as to form a set of verses? Ask either of those two fishermen whether the sun will for certain soon set, or whether it may not begin to go up again, or whether we may not this year have winter before Michaelmas Day, and not after. They will, of course, think you are chaffing them; but if you convince them that you are not, they will think you insane. If pressed to say why they are so certain about such things, they will be pretty sure to say that to doubt them would be against 'common sense.'

F. But for all these confident beliefs of theirs there are very good reasons. There is the theory of probabilities, the principle of causality, the laws and conditions of the sun and planets, etc.; so that

these popular beliefs in fact rest upon a good philosophical foundation.

M. Yes! but they do not know that foundation nor could they adduce those reasons. It is just that very power of judging philosophically, but without philosophical consciousness, which constitutes 'common sense.'

F. It seems to me a curious, vague sort of term, used to denote an ill-defined faculty which may be adduced to support any credulous belief.

M. We have already seen that if once the reality of our perception of objective truths be conceded, these generally received expressions acquire great value on account of the superior clearness and distinctness of direct thought—such as that to which these common-sense judgments owe their origin—over reflex thought, and I confess the term 'common sense' seems to me a well devised one. It may well be called 'sense,' because reflection, reasoning, and conscious combinations, are excluded from its use, and because, in an act of common sense, the mind submits to a law of its nature, as it does in experiencing a sensation. It is called 'common' because it is not 'individual,' but is the same in a multitude of minds. No one says that an individual subjective phenomenon (that is, the mere fancy of any individual) is opposed to common sense. If I were to say I saw a man walking without a head, people would say I was deluded, but not that my having the fancy was opposed to common sense. They would, however, quickly cry out that the existence of such a man without a head was against all common sense.

F. But you will surely admit that appeals to common sense are dangerous appeals and may lead to very unsatisfactory conclusions.

M. Most certainly I admit it; and the appeal is only to be made under certain conditions. I for one would not admit that a decision of common sense was certainly true unless (1) the decision was one which is practically irresistible, so that we cannot by the aid of reflection resist or avoid it; (2) unless it was a truth as to which all ordinary men would agree; (3) unless it would stand any test of reason; (4) unless the subject was within the reach of uneducated minds and such as plain men might judge of, and (5) lastly, unless as a general rule it had to do with something of real importance to the conduct of life. I should certainly never think of appealing to its verdict in any merely speculative or altogether unpractical question. With these precautions I think we may regard 'common sense' as one means of certainty, and in what you have admitted as to your certainty about the existence of Port Natal, it is clear that you admit the validity of human testimony as a cause of absolute certainty also; for you certainly only know it by such testimony.

F. How would you then arrange all these various grounds and motives of certainty?

M. I would say that there is but one ultimate criterion of certainty, namely, self-evidence, or simple evidence, but that there are various grounds, causes, or motives of certainty, namely, (1) self-consciousness, which tells us our present state of being; (2) the senses; (3) memory; (4) intellectual intuition.

and (5) inference ; also, but in a subordinate degree, (6) testimony, and (7) common sense. By our harmonious use of these motives we may, I think, attain rational certainty, and secure a sound foundation on which we may securely raise a complete philosophical edifice.

F. I shall be disposed to agree with you if in our next discussion you can dispose of my idealistic objections—my scepticism, that is, as to our real knowledge of the external world as anything external to us and independent of our existence. You see, in order to——

M. What is the matter, Frankland ? Why, you tremble like an aspen—are you ill ?

F. My dear fellow, there is Emily and her mother —those ladies in black at the door of the Burlington Hotel ! Let us turn and go home at once. Till I have seen my guardian again I could not bear to meet them.

M. Cheer up, Frankland ; you will make it right with him yet. I feel sure that it will all end well. She is fond enough of you, you know, to be willing to wait even if he holds out, but I cannot think he will allow a mere social prejudice to spoil your happiness.

F. He is such a worldly old man, that I think an angel whose father had been in business would never do for him.

M. That is a new conception of angelic nature ! But, how you did start !

F. Don't say anything about it, Maxwell ! I am ashamed of being so weak, but I confess that the mere thought of her under present circumstances so

upsets me that sometimes, for the moment, I quite forget where I am and what I am doing.

M. Well, it is a long time since breakfast, and you have had no lunch, but a long philosophical talk instead. Let us go home and drop metaphysics in favour of things about which no one is practically sceptical.

According to the foregoing argument we have a direct knowledge of our own being in action—our own self-activity. From this, by a reflex act, we may have absolutely certain knowledge either of the existence of our own state of mind—our present feeling—or of the existence of our own substantial self. We may become as clearly and certainly aware of one of these as of the other, and of the existence of either (self or state) in the past, as well as in the present. It being manifest that everything cannot be proved, it has been pointed out that all proof must ultimately rest on what is self-evident, to believe which is the very reverse of believing blindly. Absolute scepticism is not only irrational, but self-contradictory, and our memory may suffice to convince us that we do know objective truth, as for example our own past, and not merely appearances. Intellect, it has been urged, and not sense, is the ultimate judge of truth, and some things are seen to be certainly true not by a mere negative impotence, but actively and positively. Thus here again, as also in memory, the mind is carried by its own force from subjectivity to objectivity, and it sees that certain things are not only subjectively but also objectively evident, and the presence of such complete or 'simple'

evidence—that is evidence both objective and subjective—is the supreme test of truth. That we should know the self-evidence of things is wonderful, but not more wonderful than is every kind of knowledge. It is plain that if we would reason or even think coherently, we must accept the practical adequacy of speech to convey thought and the validity of inferences logically made. We must also admit the value of overwhelming human testimony, and the respect due to the common-sense judgments of mankind in ordinary practical matters. Altogether, if what has been contended is correct, it seems possible to formulate, with confidence, the following propositions :—

1. There is such a thing as certainty, both with respect to the past and to the present.

2. All knowledge must ultimately rest upon truths which are self-evident.

3. Such truths may be both objectively and subjectively evident.

4. The intellect, and not sense, is the ultimate test of truth.

5. There is one supreme criterion of truth—simple evidence.

6. There are various distinct motives or grounds of certainty.

7. These are: consciousness, the senses, memory, intellectual intuition, inference, testimony, and common sense.

8. Nothing less than the combined use of the whole of these suffices for philosophical knowledge.

9. It is only by the harmonious employment of all these means that a true philosophy can be attained.

CHAPTER III.

THE OUTER WORLD.

LINCOLN'S INN FIELDS.

Can we have a certain knowledge of an external world existing independently of ourselves such as physical science postulates?

NATURAL science offers an inexhaustible field for the activity of man's powers of observation, comparison, and reasoning. A first-class modern museum, such as that which owes its origin to the genius of John Hunter, is very wonderful when we reflect how little even the best instructed amongst us are able to gather from its contents, compared with the as yet unrecognised treasures of knowledge which are therein enshrined, and lie awaiting future observation.

Two days later than that of the conversation at Eastbourne, the two friends had been together examining the contents of that admirable collection.

Maxwell. What a different place this museum is now from what I recollect it five-and-twenty years ago! Then visitors were rare enough. Now, a man has to choose his time very carefully if he wants to have it pretty well to himself.

Frankland. Oh! All the world and his wife come here now that such a number of 'at homes' have been held in this place. The skeletons have

a lively time of it. I have seen more than one flirtation carried on under the friendly shelter of the megatherium, and have known a man made happy for life between the jaws of the 'right' whale!

M. But biological science has really made a wonderful advance in the last twenty years, and a real love for it has become widely diffused.

F. True enough! But still more diffused is the pretence of having a love for it! It has become 'the thing' to be scientific and to rush after any lecturer in vogue. But real, downright, sincere interest in science is still far too rare. Of the many who visit the Botanical Gardens how very few take the trouble to leave the promenade in order to examine any object of scientific interest of which they see a notice at the gate which the secretary has been careful to put up!

M. No doubt fashion has much to do with it, and people like to trifle with it as they like to flirt a little with philosophy—under the guise of 'agnosticism,' as they call it. I only wish, if they do take to the latter, they could be got to go into it deeply. But it is quite the exception for anyone to be willing to pursue the subject, even as closely as you did at Eastbourne. When shall we examine together the question as to the 'external world'?

F. Now, if you like! I think we have done our survey of that part of it which forms this collection.

M. What have you to say, then, against my certainty as to the real existence, independently of my own mind, of all these bones and bottles about us?

F. Before replying I will ask you a preliminary question. You will admit that we often have prolonged, consistent, and vivid dreams; that as long as

they last we do not doubt the reality of our perceptions, and that we may suffer distress or enjoy rapture much as in our waking moments. Now, if a man passed half his life in sleep and always dreamt a continuation of the same dream, he would not know which was his true life and which was his dream. How, then, can we be certain that all our life is not a dream?

M. Certainly not by the mere vividness of feelings. But for all that I find so great a difference between those two sets of feelings I call my dreaming and my waking states, that I never have, when awake, any difficulty in distinguishing between the two. In what I call my waking state, I have a power of will in directing my thoughts and a power of testing my apparent perceptions by the use for that purpose of different senses. I may confirm the apparent testimony of my eyesight by touch, by taste, or by smell. I can also have recourse to a special class of feelings, which I call 'the testimony of other people.' In my dreaming state ~~this~~ is not so. Often I have consoled myself in a disagreeable dream by the assurance that it was only a dream; though, very rarely, I have in a dream rejoiced or grieved because my dream was not a dream but, as I thought, a reality. I have always noticed, however, on awaking, how very superior and how much more complete was my assurance as to the true nature of my actual state when awake, to any assurance I could obtain about my actual state while I was dreaming. I have never, when asleep, reflected that I was simultaneously using different faculties, but I can always when awake use such and reflect on my using them. When awake I

think over what I have done, what I am doing, and what I shall do; I recollect past dreams, and compare them with the objects around me and with my actions while awake. I also know that in my dreaming state I often have confused, inconsistent, chaotic impressions, that I never use a vigorous will, and often have much less clear and distinct perceptions than I ever have while awake. In my dreaming state also, appearances often come suddenly to an end and while the successive periods of my dreaming state are disconnected and mutually inconsistent, the successive periods of my waking state are distinctly connected, and form a consistent serial whole. Moreover, I know very well, when awake, that my ideas have an objective origin. I have no such knowledge—or, if you like, persuasion—as to my impressions while sleeping. Thus apart altogether from anything external to my own mind, I can distinguish between those two sets of states I call my dreaming and waking states, in the most clear and certain manner.

F. So far so good; but these two sets of states are your states in what you call different conditions of your being, and may both be merely diverse products of your being. Your dreams, you will admit, are such mere products of your mind, and have no independent existence; how do you know that your waking states, though different in kind, may not have a fundamentally similar cause?

M. Just as during my whole life I distinguish two sets of states, which I call my sleeping and waking states, so also in my waking condition I distinguish other sets of feelings, which I am compelled to

classify in two distinct groups, viewing them merely as mental states and without any reference to an external world. Let us sit down on this elephant's pedestal! At present, if I close my eyes I can successively contemplate a variety of imaginary scenes. Now I am on Leith Hill and can see the sea, if I will, through Shoreham gap with vessels sailing on it. Now I am at the Royal Institution listening to poor Faraday, and seem to hear the tones and see the gestures I so well recollect; but I can, more or less quickly and directly, change him for another lecturer. Now I turn my mind to review the spot where we sat together at Eastbourne, and can listen either to the band or to the sound of the waves. Over all these series of states my will has an influence. But when I look through the middle room of this Museum I see objects there which are familiar to me of old, and which I cannot make come and go, do what I may. As I look round this large hall everything is in its wonted place, and my mere will is utterly powerless in any way to shift the nature or arrangement of the objects about me. There, I see in the farthest room Professor Busk looking at a skull! By no mental effort can I remove or change him as I just now could Professor Faraday. I therefore am conscious of two sets of mental phenomena. Over one my will has a certain influence, but as to the other it is absolutely powerless. In the one set there is a great facility of change, in the other there is permanence. On these accounts I conclude that the latter set of mental phenomena, which I call my 'perceptions of external objects,' is—unlike my dreams and imaginations—a set due to some other cause than

myself, and that cause I take to be the real existence of objects which are independent of my existence.

F. I grant you that there are these two distinct sets of phenomena, but I cannot admit the conclusion to which you rush. Granted that what you call your 'external perceptions' have a cause independent of your will, that does not prove either that the things perceived are independent of you, and still less that their cause is the existence of so many real, material, solid, extended and external bodies, such as I suppose you take them to be. The cause of these phenomena you call your 'perceptions' may be of another kind—may be, as Berkeley taught, the mind of God—or may be some utterly unknown and unknowable entity, or may be a set of really existing things of which things you can nevertheless know nothing truly, as is the more modern conception.

M. Let us take one hypothesis at a time! I do assert the existence of real, material substances, independent of my being—such as this ape's skull. How can its existence, which is made evident to me through my senses, be dependent on my existence?

F. What do you see? A certain definitely shaped patch of colour you call bone-colour. That is a sensation you have. What do you feel? A certain smoothness of surface, which is another of your sensations. If you with your hand test its solidity or explore its shape, you have really but other sensations of muscular effort and tension. If you tap it smartly with your fingers, it, as you say, emits a sound. That is, you have yet another kind of sensation. If it has any smell or any taste, what are these but two other kinds of sensations—two

other states of your own being? You cannot from anything you call a material object arrive at aught but modifications of your own mental states—different feelings or ideas; beyond these, you can really know nothing.

M. Pardon me. I know, through my senses, this ape's skull as a solid material object which would exist as it does, apart from the existence of my mind or of any other mind. My senses make me aware of objective qualities which it really has, and which correspond with, and are made known to me through, my sensations. I admit, of course, that those sensations themselves are subjective only, but through them I am made aware of the existence of this real, objective body, and of many of its qualities.

F. But you must admit that this skull could not exist as it does apart from you, for it now exists in a state of 'exciting your sensations.' If you were not here it could not at any rate so exist. Moreover, its existence would be unknown and unknowable to all of us did it not give rise to sensations in some of us, and therefore its existence apart from my mind could not be what it is now, nor what we mean 'by existence,' since all existence we know is an existence 'known,' and as we could never have known an existence which was unknown to everybody—which would be a contradiction in terms—we cannot possibly imagine an existence unknown to everybody.

M. Of course things unknown cannot be known while they exist as unknown objects, and of course a thing perceived by me does not exist in a state of 'being perceived by me' when I do not perceive it. But my perceiving or not perceiving it is a mere

accident of its existence, which existence continues on essentially the same whether perceived or not. The impressions, sensations, and ideas derived from things do not of course exist independently of the mind which has them; but there may be, and there are, things corresponding to them (to the impressions, etc.), which things sensations serve to make known, and which exist externally to, and independently of the mind, as unthinking substances—things in themselves.

F. But an idea or a sensation can be like nothing but an idea or a sensation; a colour or figure can be like nothing but a colour or figure. What as an idealist I deny, is not the existence of external things felt, but of an underlying something supporting their sensible attributes, and which something cannot be felt or attained to by any of the senses. If by 'a thing in itself' you mean a plexus of sensations or ideas, we are at one, and I fully admit its existence. But if it is something producing them, then the thing itself, cannot be seen, felt, etc., and must therefore be quite unlike anything I know; for how can a colour be like something which is invisible, or how can 'hard' or 'soft' be like something which is intangible? What then can objects be beyond that which we feel and perceive them to be? Their very essence is to be perceived, and in not being perceived they cease to be—not being perceived, that is, not by your mind exclusively, but by any and every mind, including, if you like, that of God.

M. I firmly believe that objects about us are not dependent for their existence either upon our perception of them or upon the perception of them by any other mind, and that objects *per se* would con-

tinue to exist as they are—except, of course, as regards being perceived—if all minds were annihilated. Our perception of objects does not in any way essentially alter them. I believe that external, material objects exist independently of us, and are unlike the sensations they excite in us, while, at the same time, I believe these very objects produce perceptions which are really like the objective properties of such material, external objects.

F. You believe! That is all very fine, but belief is not knowledge. If you cannot know anything beyond your own ideas, why do you affirm that there is anything beyond them? I defy you to imagine anything existing unperceived. You cannot imagine matter existing in the absence of mind, for in the very act of imagining it you must include an ideal percipient. If you try to think of these bones about us apart from yourself, you must either (1) imagine them here perceived by somebody else and yourself absent, or else (2) imagine your conception—your mental images of the bones—transported to some place where you do not imagine yourself to be; and yet they remain the ideas of your own mind all the while! I have copied out for you an extract from Berkeley's 'Principles of Human Knowledge.' He there says:

'I am content to put the whole upon this issue: if you can but conceive it possible for one extended movable substance, or, in general, for any one idea or anything like an idea, to exist otherwise than in a mind perceiving it, I shall readily give up the cause. I shall grant you its existence, though you cannot either give me a reason why you believe it exists, or

assign any use to it when it is supposed to exist. I say the bare possibility of your opinion being true shall pass for an argument that it is so.

'But, say you, surely there is nothing easier than for me to imagine trees in a park or books in a closet, and nobody by to perceive them. I answer, you may do so: there is no difficulty in it. But what is all this, I beseech you, more than forming in your mind certain ideas which you call books and trees, and at the same time omitting to form the idea of any one perceiving them?

'But do not you yourself perceive or think of them all the while? This, therefore, is nothing to the purpose. It only shows you have the power of imagining or forming ideas in your mind, but it does not show that you conceive it possible the object of your thoughts may exist without the mind. To make out this it is necessary that you conceive them existing unperceived or unthought of, which is a manifest repugnancy. When we do our utmost to conceive the existence of external bodies we are all the while only contemplating our own ideas.'

M. This is really saying no more than that we cannot think without thinking. Of course I cannot imagine a thing existing unperceived by anybody, but I certainly can conceive it. I thought I made you see at Eastbourne the difference between imagining a thing and conceiving of it. But, anyhow, you go altogether against the universal persuasion of mankind and against your own practical judgment, as I hope to show you.

F. I do not think you can. I know the common opposition to idealism, which would refute it as John-

son tried to do—by 'kicking a stone.' I also know the silly and shallow ridicule of 'Reid's Inquiry.' I do not suspect you of that kind of opposition; still I have armed myself with this proof of Berkeley's, having foreseen it. Here is another bit from his same work:

'I do not argue against the existence of any one thing that we can apprehend either by sensation or reflection. That the things I see with my eyes and touch with my hands do exist, really exist, I make not the least question. The only thing whose existence I deny is that which philosophers call matter or corporeal substance. And in doing this there is no damage done to the rest of mankind, who I daresay will never miss it.

'If any man thinks we detract from the reality or existence of things he is very far from understanding what has been premised in the plainest terms I could think of.' Again, he says: 'It will be urged that thus much at least is true, viz., that we take away all corporeal substances. To this my answer is, that if the word 'substance' be taken in the vulgar sense for a combination of sensible qualities, such as extension, solidity, weight, etc., this we cannot be accused of taking away. But if it be taken in the philosophic sense for the support of accidents or qualities without the mind, then indeed I acknowledge that we take it away, if one may be said to take away that which never had any existence, not even in imagination.

'But say what we can, some one perhaps may be apt to reply he will still believe his senses, and never suffer any arguments, however plausible, to prevail

over the certainty of them. Be it so; assert the evidence of sense as high as you please, we are willing to do the same. That what I see, hear, and feel, doth exist, i.e., is perceived by me, I no more doubt than I do my own being; but I do not see how the testimony of sense can be alleged as a proof of anything which is not perceived by sense.'

M. I know how grossly and commonly Berkeley, for whom I have a great veneration, has been misunderstood. Nevertheless, ordinary men are, I believe, right in judging that what he disputed about concerns them more nearly than Berkeley would have them believe it does, and that, if he is right, their world would really be turned upside down, or, rather, be put an end to altogether. But I hope to convince you that I both understand him and can show you good grounds for rejecting his views. I fully admit, however, that our ordinary, every-day perceptions and experiences can be expressed in idealist phraseology, and I will even go so far as to affirm that as to these simple experiences of ours his system is irrefutable if our perceptions are what he represents them to be—perceptions of our own ideas and sensations only. That mode of representing knowledge he derived from Locke, whose inconsistent views he thus interpreted, as most other writers and critics have also interpreted them. I, however, believe that Locke, Berkeley, Hume, and their followers are all fundamentally in error on this point, and it is by convincing you of this that I hope to, as it were, tear out idealism from your mind by its roots. For the present, however, I will not go into this question,

but first, without disputing their theory of knowledge, endeavour to show you that idealism is untenable.

F. I shall be much interested in hearing you try to do so.

M. When we were looking at those skeletons of kangaroos and opossums, you may recollect noticing the pair of marsupial bones which each has attached to the front rim of its hip girdle, or pelvis, and you also may recollect that in the same animals the angle of the lower jaw is bent in. I spoke to you about the curiously constant co-existence of these two apparently disconnected characters.

F. I recollect it all perfectly.

M. Well, amongst the fossil remains found by Cuvier at Montmartre was the skeleton of a small beast, the skull of which had the angle of its lower jaw bent in. From his knowledge of the law of co-existence, just referred to, he felt sure that when the stone should be chiselled away from the as yet hidden pelvic region of the skeleton, a pair of marsupial bones would there be found. Accordingly, he invited some friends to be present at the operation, and, having predicted what would appear, set to work, and before their admiring eyes laid bare the very marsupial bones, the existence of which he had predicted. Can you see, through that door-way, part of the skeleton of the extinct mylodon in the middle room?

F. Yes, I see it.

M. Perhaps you also recollect that I told you that, like the megatherium (in spite of their vast bulk), it was more nearly allied to those comparatively small living animals, the sloths—which pass their lives hanging to

the branches of trees, the leaves of which they feed on—than to any other animals. How, then, did those great beasts pass their lives? A Scandinavian naturalist supposed that in the time of the mylodon there were trees so bulky that it could hang on them as a sloth hangs. This groundless hypothesis deservedly found no favour. Our Professor Owen, however, most sagaciously hit on the true explanation. Having pondered over the rugged ridges and processes of the animal's leg-bones—which indicated the vast masses of muscle which had once clothed them—together with the structure of its pelvis and tail, Professor Owen suggested that the mylodon had been in the habit of rearing itself on its hind limbs and tail, as on a tripod, and then, while embracing the trunk of a tree with its powerful arms, swaying it to and fro till it fell, the mylodon afterwards feeding upon its foliage. It was objected to this theory that with such habits the animal would be very liable to get its head broken. The Professor thereupon examined the head of his mylodon, and found that its brain-case—which had been broken—was so constructed as to enable the animal to endure a certain amount of such fracture with little inconvenience.

F. Very interesting; but I confess I do not quite see the bearing of these facts on Berkeley's philosophy.

M. They will serve to show you that even in biology there are instances of successful predictions more or less like those with which astronomy has made us so familiar in the matter of eclipses that we have ceased to wonder at them, though Leverrier's successful prediction of the existence of Neptune will long be cited with admiration. Biology has

other predictions besides, based on the theory of evolution. From our knowledge of the anatomy of different existing kinds of animals we can be certain that other forms, intermediate in structure, once existed. These anticipations have been now and again justified by the discovery of such forms in a fossil state, and I think you must admit that such cases are wonderful instances of fulfilled prediction. Let me also remind you how in chemistry we can predict with certainty the consequences that will ensue from various combinations, and the results of all sorts of analyses. But you will, I know, admit that physical science is continually enabling us to make successful predictions, owing to our knowledge of how the various causes and conditions act, which bring about the predicted results.

F. No doubt all this is true, but idealism is not affected by it. It all amounts to no more than saying that our present ideas tell us that if we do that which you would call 'making certain changes of place and conditions,' we should then have other ideas, which as yet are not present to us.

M. Pardon me, it amounts to much more than that. Observe, science tells us not only[1] what we shall perceive under certain conditions, but also, as just now said, how it comes about that we shall perceive it, and what are the antecedent causes and their actions, independently altogether of anybody perceiving them. It tells us that there was a time when there were no minds to perceive, and that yet the interaction of physical causes went on till, after many ages, the world became fit for animal life, and,

[1] This has been urged by Mr. Arthur Balfour, see *l. c.*, p. 182.

ultimately, for mind to find a place on its surface. In fact, as you know well enough, science demands a belief in the existence of matter which is quite independent of sensation or perception, and which is solid, extended, and which possesses various other properties. How is it possible to state all these relations and conditions in the language of idealism? How could you, for example, thus state the scientific belief that after the existence for countless ages of merely inorganic matter, organic matter, and ultimately sentient matter were successively evolved? As Herbert Spencer justly says, 'If idealism be true, evolution is a dream'; and not evolution only, but the whole of physical science!

F. It seems to be so indeed. But recollect that Berkeley asserted the existence of a Divine intelligence; now granting that, it becomes by no means impossible to understand all these relations as being ideas of God, communicated by Him to inferior intelligences.

M. Can you in earnest maintain an hypothesis so preposterous? What! you tell me that God for millions of ages entertained a multitude of ideas of existences as real which were not real, as existing in a mode in which they did not exist, and then, ultimately, when human intelligences came to be, that he caused, and constantly causes, them all to agree in possessing representations of bodies as independent of themselves, and of other minds like theirs, and as existing *per se*, which bodies were and are not really independent of the mind and do not exist *per se*? Do you tell me also that as ages went on He caused them to further represent to themselves a vast coherent and verifiable system of physical

science, with its complex invariable laws, its successful predictions and unceasing utility to human life, the whole being based on conceptions of causes and interactions which are absolutely false? Rather than accept such a God as that I would choose Atheism as less contradictory to my reason. Let us rather have no God at all than a mendacious one.

F. No doubt this objection of yours, drawn from the belief which physical science imposes, has a very different force from that drawn from a consideration of our ordinary simple perceptions. The latter objection was the only one Berkeley met, but then he had to contend with people who argued that, to be consistent, he ought to walk into ponds, run against posts, and commit other similar absurdities. However, his assumption of a permanent thinking substance—the mind of God—as the direct cause of our feelings, is a belief accepted now by hardly anybody, and I myself only referred to it for argument's sake. But you have spoken of Herbert Spencer's remark as to evolution being a dream if idealism be true. Yet his system is one which conflicts with ordinary beliefs almost, if not quite, as much as Berkeley's does, and the same may be said of the systems of Lewes and John Stuart Mill. They all agree in affirming with Hume that we can have no real knowledge of bodies as they exist independently of ourselves—that is, that we can have no true knowledge of them. Now what such distinguished thinkers agree in affirming must merit respect, even if their agreement about it does not suffice to convince us that it is certainly true.

M. Each of these writers merits great respect;

but, in the first place, their teachings do not agree, but conflict. They refute each other, except in one fundamental point, which they all take for granted, and which not one of them proves; I mean their opinion as to the nature of our knowledge. In this they cannot be said to confirm each other, since they merely coincide in an identical assumption, about which I will speak presently.

F. Let me hear what you have to say as to Mill's special views. He is the only one of the three who really merits to be called an idealist. What have you to say against his system? He, at least, believed himself to be a true idealist, and yet he had the most thorough sympathy and wide acquaintance with physical science.

M. And yet his system, if logically followed out, would have compelled him to cease his sympathy and to acknowledge the futility of all science. He professed, as you know, to believe in a universe consisting of nothing but 'sensations' and 'permanent possibilities of sensation,' but he never explained to us what he meant by a 'possibility of sensation.' Yet the word 'possibility' is absolutely unmeaning unless it refers to some entity besides that which is conceived as possibly becoming actual. The very word necessitates a belief in something which is to make the possible become actual. The merely possible, while only possible, is nothing, and it cannot actuate itself. We have, then, according to Mill, 'senstions actual' and 'sensations possible.' But he could not mean that actual sensations themselves were capable of bringing into existence other, as yet only possible, sensations. Neither could these other

'possible' sensations bring themselves into existence, since, by the very hypothesis, they do not yet exist. Therefore, if his words are not unmeaning, there must be believed to be some entity besides 'sensations actual' and 'sensations possible,' namely, an entity in which the possible actuality of the 'possible' sensations resides—a substance or substances in and by which such possible sensations have their possibility determined into actuality. In plain language, Mill's permanent possibilities of sensation really are so many real substances, capable of exciting sensation. In fact, he believed, as you and I do, in feelings and in a number of enduring bodies which are capable of modifying our feelings, and which can undergo change, act as causes, and can exist without being perceived. With all his great ability, Mill had a singular proneness to elaborate self-refutation, and one of the most conspicuous and remarkable instances of such self-refutation is this unavoidable self-contradiction which he has placed as the very corner-stone of his whole philosophy.

F. That there is this defect, this curious self-refutation, to be met with every here and there in Mill's writings cannot be denied; for there are too many minor instances of it. But Herbert Spencer has a great acquaintance with physical science, and has developed what seems a wonderfully self-consistent and coherent philosophy, and yet he, at the same time, professes both to refute idealism and to uphold a system which he calls 'transfigured realism. But that so-called 'realism' of his contradicts, I imagine, what you would maintain as much as Berkeley's idealism does.

M. Precisely so, and his refutation of idealism is therefore singularly inconsequent and unhappy, for, in the first place, he misapprehends it; and secondly, he urges against it arguments which, if valid, would be equally destructive to the system he himself maintains. What physical science and common sense require to be believed is that the numbers, shapes, solidities, and motions of bodies really exist objectively—as we understand them to exist—so that we can reason and make deductions and true predictions about them. Yet Mr. Spencer denies the objective validity of our ideas of quantity, quality, and relation, and even our perception of difference. He tells us dogmatically[1] that 'no relation in consciousness can resemble or be in any way akin to its source beyond consciousness.' Thus the world about us, as we think we know it, disappears not merely from our gaze but even from our thought; not only all the sights and sounds of nature cease to be realities for us, but the earth itself, and our own bodies vanish and leave us in a state of absolute mental incoherence, for he does not even leave us that conception of substantial mind (human and divine) on which Berkeley could and did build a system coherent enough to agree fairly well with our simple, every-day perceptions and experiences, his theory of knowledge once granted. But Mr. Spencer plays fast and loose with the question, and in trying to obtain what he deems the advantages of both idealism and realism, has put forward a self-destructive system which has the merits of neither. We have not time to go further into his system now; I

[1] See *Principles of Psychology*, vol. ii. p. 494.

must refer you to the third chapter of Mivart's 'Lessons from Nature' and the eleventh chapter of Mr. Balfour's 'Defence of Philosophic Doubt.'

F. What do you think of Mr. G. H. Lewes's views, how do they differ from those of Mr. Herbert Spencer?

M. Spencer represents knowledge as arising from the action of unknown and unknowable objective existence upon us in such a way that there is a certain equivalent relation between its actions and our perceptions. The objective unknowable entity he seems to regard as active, the receptive intelligence as passive. Mr. Lewes, on the other hand, regards both subject and object as active, and every perception as a *tertium quid* resulting from their combined activity and interaction but yet resembling neither, any more than water resembles the oxygen and hydrogen from the combination of both of which it results. Nevertheless Mr. Lewes believed—as a sort of faith—in the existence of an independent external matter, unlike our sensations, yet the cause of them. This sort of materialism, based on faith and incapable of justifying itself to reason, is the prevalent mode of belief amongst the scientific men of our time. There is this profound discord in our present popular philosophy. Please observe, however, that, apart from this irrational 'faith,' the systems of Lewes and Spencer are quite as inconsistent with science as is that of Berkeley. Science, as I have said before, agrees with common sense in demanding a belief in real objective bodies, really known as causes of the various phenomena, the laws and interrelations of

which it investigates. The followers of these systems are scientific men only in so far as they practically disregard the professed nescience of their systems and believe with other people.

F. But when they speak, as they sometimes do, of 'purely physical changes and conditions,' they may really mean 'a set of their own ideas of one order, as distinguished from sets of their own ideas of other orders.' They may not then be so inconsistent as you would represent.

M. Indeed they must be. When, for instance, they speak of certain 'vibrations' as causes of observed phenomena, what must they mean? The phenomena they observe are certain members of that group of feelings which they call their 'vivid states of consciousness.' Now by the 'vibrations' they must mean (since they affirm that nothing can be known but 'states of mind') certain 'faint states of consciousness.' But can you believe that when a professor tells you, *e.g.*, that your 'sensation of violet' is caused by a particle of matter vibrating seven hundred billions of times in a second, he really means by the expression 'particle of matter' a state of your mind? Could he even pretend to offer such an assertion to you as any really satisfactory explanation of the fact? Could he say in telling you that a spectral illusion you seemed to see was due to an abnormal condition of your brain, he had really meant by 'an abnormal condition of your brain' a plexus of his or your ideas? The thing is absurd! He means in fact just what you and I mean, so that this representation of his is a mere piece of intellectual thimble-rigging, a game by

which the unwary onlooker is only too liable to be cheated out of his most valuable mental possession—his rational certainty. The men of this school do really believe in 'material objects' and 'physical states,' as realities independent of their minds and of every one else's; but on their system of knowledge they can (since they say they can know nothing but states of consciousness) only get this belief of theirs by an act of blind and unreasoning credulity. They must, in order to be rational and consistent, either give up science as they themselves teach it, or give up their theory as to our mode of acquiring knowledge, which theory —assumed without proof—underlies and supports all these systems from Berkeley and Hume to Mill, Lewes, and Spencer.

F. Well, then, what do you consider the radical fault of these thinkers? You cannot expect me to disregard a doctrine in which such men agree upon the strength of your mere assertion? What, then, is the fundamental assumption of theirs which you object to and how do you propose to refute it?

M. It is the assumption that all our knowledge is a knowledge of our own feelings—our own conscious states—which feelings are divisible into two groups: (1) Vivid states, 'impressions' or 'sensations,' and (2) faint states or 'ideas,' the latter being but faint revivals of the vivid states.

F. But you yourself just now divided our mental states into two groups more or less similar to these.

M. Not similar! I divided them into (1) those over which our will has influence and which are not permanent, and (2) those which are permanent and

over which our will has no influence. Some imaginations and emotions are more vivid than ordinary sensations—as you, at least, must admit when you recollect your feelings at Eastbourne on seeing the ladies.

F. That is true, and there are also imaginations which are not only as vivid as sensations but are quite beyond our control—I mean fixed ideas and mental delusions.

M. I must again remind you that no philosophy can secure mankind from occasional cases of mental aberration. But even imaginations which persistently return and which cannot be expelled as we might wish to expel them, can—except in cases of absolute delusion and temporary insanity—be at least temporarily expelled, while neither of us by any mental effort can for a moment expel from our consciousness those glass cases with their contents and bring other objects into their places. The cases are permanent objects.

F. Still you have yourself admitted that we can imagine nothing which we have not first had experience of or perceived. Now though I cannot, of course, say that, therefore, there is nothing in perception which is not reproduced imagination, yet I should very much like you to tell me what there is in it which goes beyond such mere reproduced imagination. If I understand you rightly you say that though past sensation can be reproduced in imagination, yet ideas are not such mere reproductions because they contain what exceeds and differs from anything we have received in sensation however complexly interrelated.

M. Quite so, and your own words supply an

example in point. You speak of 'experience,' and have the idea in your mind. Evidently that idea cannot be in you a faint reproduction of past feelings, for 'experience' was never felt at all, nor was it ever a relation between feelings. By means of reiterated and more or less varied feelings we may acquire increased facility for, or augmented, or diminished, pleasure in, such repetitions; but this is something very different from the idea of experience as a real or possible fact. Look at that giraffe. You not only see it but you know that you see it, and you can form a distinct idea of your act of seeing it, but that act of seeing was itself never felt, nor was it ever a relation between feelings.

F. This seems to me sophistry and indeed untrue. I feel my act in seeing. I feel a certain activity in my eyes, and as I know some anatomy, I know I feel the movements of the muscles of my eyeballs, and may, perhaps, have some faint feeling from the contraction of the ciliary muscle or of the iris.

M. Have as many such feelings as ever you please. Even feel, if you like, wave-movements in the rods and cones of your retina. None of such acts are your act of seeing any more than is the opening of a shutter the same thing as seeing a landscape, which it, while unopened, hid from view. Of 'sights' you have of course had plenty of sensuous experience, but not one jot or tittle of such experience have you ever had with respect to your 'act of sight itself.' That cannot be seen or felt or heard either in yourself or in other people. Yet you know very well what it is, and we all constantly speak familiarly about it. Let us now take

another idea, for example that of 'nothing.' Of what past sensations or relations between sensations is that a revival? Can we imagine it? Of course not! Yet we have a definite idea of it, as is proved by our daily use of the expression in assertions which would be utterly meaningless were there not a definite meaning in it. Without the idea 'nothing' we could not perceive the principle of contradiction or the truth that everything either is or is not.

F. What you call the idea 'nothing,' or 'not being,' seems to me not to be an idea at all, but only the absence of an idea, and I think that to apprehend it is not 'to conceive,' but 'to not conceive.'

M. Pardon me, but that is quite a mistake. 'To not conceive' is to do nothing; but to say 'nothing can make itself or can give what it has not,' or 'if you take two from two nothing remains,' is to express a judgment, and I am quite sure that you yourself have the idea of 'nothing' clearly enough to see that 'emitting a judgment' and 'doing nothing' are very different things. But it is plain that we understand the meaning of the word 'nothing,' since we distinguish it clearly from all other ideas. Let us now take a most simple positive idea—that of the number two. That idea is something more than can be elicited by the mere sensuous perception or the imagination of any two objects whatever; they must be objects of a certain class. The objects thought of must be objects which are susceptible of comparison, and which can therefore be united in a common idea. You could not say, for example, that the large glass bottle in that corner of the gallery and Scott's conception of the character of Effie Deans are 'two,'

unless you consider them in the light of 'things thought of by you,' 'your ideas,' of which they may really be 'two.' The idea 'two' can therefore only arise as the result of comparison and of a perception of 'being,' 'distinction,' and 'similarity.'

F. That is really too strong! Do you mean to declare that when I say 'I wear a pair of braces' I have the ideas 'being,' 'distinction,' and 'similarity'?

M. Certainly I do, and their latent presence will become manifest to you if I traverse any one of them. Thus, if I say to you 'what you call braces are a figment of your imagination' (and so deny their 'being'), or 'they are not a pair: there is only one brace' (and so deny their 'distinction'), or 'one is a brace and the other is a stirrup' (and so deny their 'similarity'), in each and every case I equally contradict what you really assert, and what was implicitly, if not explicitly, present to your mind when you said you wore a pair of braces.

F. But in all these assertions there are present to the imagination faint revivals of visual sensations.

M. As we make these assertions, such revivals, no doubt, are present; but they are not necessarily present. The idea, though of course not the image of a triangle exists for a man born blind as well as for one who sees, as is proved by his being able to apprehend the force of geometrical arguments concerning triangles, a force which entirely depends on the clearness of this idea; and the same thing applies to arithmetic. The independence of sensuous images which ideas may enjoy is shown by the utterly different signs and images which may serve to denote one and the same idea. Thus the idea 'cause' may be symbolised

by the written letters of the word, by its sound, by a tree blown by the wind, by a wave of the sea pushing pebbles, by the lighting of a train of gunpowder, by a mental act of will, by a vibration, by the articulations of the bones of this skeleton. The idea 'God' may be accompanied in the mind by the image of an old man in the clouds, or crowned and on a throne, or by that of a ray of light, or of an eye in the clouds, or of a triangle, or by the letters G O D, or by the sound of that word, or even by certain gestures. Of which of such divergent sensuous impressions can such ideas be said to be faint revivals?

F. But it has been clearly demonstrated that though we may admit or believe in the existence of real objects independent of ourselves, nevertheless even their primary qualities, which we think we perceive, such as their 'solidity' and 'extension,' are not truly perceived by us. In such fancied perceptions all we really perceive is a certain set of our own sensations. Thus with regard to the extension of bodies, as of this chair, we only know it through a combination of feelings of resistance, which are themselves composed of feelings of muscular tension and pressure, and our conceptions of 'matter,' 'motion,' and 'force' are also but modifications of the same kinds of feelings. Therefore what we call 'extension,' 'figure,' 'motion,' and even 'number' are but names for complex groups of faintly revived sensations, produced in us by an unknowable objective existence, the real properties of which our conceptions in no way resemble. Our conception of 'force,' for example, is unquestionably but a generalisation of our muscular sensations.

M. Indeed! I very willingly admit that 'force' becomes known to us through our sense of effort, resistance, and resistance overcome, and that sensations of the kind are the occasions through which and by which our intellect comes to perceive that surrounding bodies have powers corresponding to our own. But you do not on this account mean to say that you really attribute to this chair activities such as your own? You surely only attribute to it activities which have a certain analogy with your own. If I try to pull you off the ground against your will, and fail because you are the stronger man, and if I try to pull up that glass case and fail because it is too heavy, I perceive indeed a certain analogy between the two instances—between your pulling me, and the earth by gravity pulling the glass case—but I clearly understand that there is a great difference between the two, not merely in the concomitant circumstances, but in the essential nature of the two 'pulls.' Although in each case I have but my more or less similar sensations to guide me, my intellect arrives at a quite different result in the two instances, perceiving in the one an active, living power and in the other a mere brute force. So with 'extension,' 'figure,' 'number,' etc., through my sensations and the relations between them I arrive at something fundamentally different from either—namely, an apprehension of external objective conditions of real independent bodies, which conditions are utterly unlike the sensations and relations between sensations, which are the exciting cause that my intellect apprehends those same objective conditions. When I examine my perceptions, or

intuitions, of 'extension,' 'solidity,' 'force,' 'number,' etc., and compare them with the sensations, including sensations of relation, to which you would reduce them, I find that a mere union of such feelings omits the main point, the very essence, of each such perception. It is Hamlet without the Prince of Denmark.

F. But you admit that feelings of 'muscular effort' are the stimuli which call forth in our minds the idea 'extension.' I cannot see, then, why it may not really be those sensations unified and transformed.

M. My admission in no way even tends to show that such feelings are the idea 'extension.' You might as well say that 'gold' is 'digging,' because 'digging' may have been employed in acquiring it. The nature of an idea is one thing; its mode of elicitation or acquisition is another and a very different thing. If introspection can tell us anything—and if it cannot we must give up all philosophy and all physical science also—it can tell us that the 'idea of extension' and 'feelings of effort and of motion' are things which are utterly diverse. This idea may exist apart from sensations of sight, for it exists for the blind. It can exist apart from sensations of touch or of muscular effort, for it may be revealed by sight alone. With the other senses it has nothing to do. It can persist unchanged, while an extended object changes from solid to fluid, from hot to cold, from smooth to rough, from rest to motion, etc. Moreover, the idea itself is one, though it is called into being by such a multitude of sensuous experiences of different kinds.

F. All this is very true; but still we know that our

minds may be deceived in thinking a sensation is simple when it is really compound, and if so, it may well be that when we think an idea to be one, it may really be compound and made up of transformed sensations. This objection applies to your preceding instances. That this deception does exist is shown by one kind of mental state, which seems to be simple and elementary and yet is not so, and this is musical sound. We may hear a succession of taps or beats distinctly, and these may get quicker and quicker till they can be no longer identified as separate states of consciousness, but instead of them there arises one continuous state of consciousness which we call a musical tone, of which the beats are proximate components. This tone will then go on rising in pitch, as the now no longer heard beats grow quicker and quicker, while if certain other simultaneous beats accompany them, we get the mental state called '*timbre*.' We may see this still more plainly by holding a vibrating musical fork between the teeth, for thus we have by means of our teeth a jarring sensation, while at the same time we hear through the skull the musical tone.

M. Your reasoning in this matter is ingenious, but for all that quite fallacious. I must deny your assertions altogether. What you call 'proximate components' are no parts of the feeling of sound at all. You will, I think, see this if you reflect that the beats or taps at first heard do not become sound—they are sound already; similarly a musical note is not made up of a succession of beats, though it is elicited by them. There is no doubt a *minimum audibile* on the part of the impression, as well as on

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the part of vibrating matter, and certain complications of both are necessary antecedent conditions for the perception of a musical tone. But that perception itself is nevertheless a simple unity of feeling. Feelings of vibrations or 'beats,' do not become a musical note, though they serve to elicit it. The musical note only begins to exist as the beat-sounds cease. A 'feeling of musical tone' and a 'feeling of beats' are different feelings. Your instance only shows that diverse conditions result in the evocation of different simple feelings; it does not in the least show that one such feeling (a musical note) is made up of the other feeling (slightly heard beats). Not only is there no tittle of evidence that one is made up of the other, but all the evidence we can possibly have on the matter—that of consciousness—tells us the direct contrary. You might just as well say, if a certain number and velocity of taps cause you a pleasant feeling, while an increase in their rapidity causes you pain, that pleasure and pain are the same thing, and that pain is made up of a number of small unnoticed pleasures. You are confounding together the physical conditions of feelings with the feelings themselves. Because two kinds of auditory sensation have for cause the same visible object in different states, it no more follows that they are the same than it follows that seeing and hearing are the same because a vibrating cord may produce an impression on the eye as well as on the ear. If, as you say, an apparently simple feeling of *timbre* is not really simple, of what is it composed? You cannot say that it is made up of minute objective throbs, for that would break down the very distinction you

assert between the subjective and the objective. You must really mean, then, that it is made up of minute feelings which correspond to such throbs, but which are not perceived. But to affirm that is to commit the absurdity of saying that a feeling is made up of feelings which are not felt.

F. You are convinced, then, that what seems clearly to your mind to be a simple idea is a simple idea, and that 'extension,' 'motion,' figure,' and 'number' are such simple ideas, and represent qualities of external objects, which qualities you are enabled, through your senses, to perceive to be really existing in such objects independently of your mind.

M. What other test can we have but consciousness? To appeal to any external test is *ipso facto* to admit the validity of our perceptions as to the primary qualities of external bodies. We should then be in the absurd position of asserting their validity, in order by thus asserting it to deny it.

F. I admit that without practically accepting this spontaneous belief in the independent existence of external objects and their qualities, science would be impossible; and also that if it be practically accepted and speculatively denied or doubted, our intellectual being is profoundly out of harmony and in a chaotic and internally conflicting state. I would therefore gladly accept your view, but that I feel sure there is no more reason for accepting the certain validity of our ordinary beliefs about the primary qualities of bodies (their extension, solidity, number, figure etc.) than there is for accepting our ordinary beliefs as to

the secondary qualities of bodies (their colours, sounds, smells, tastes etc.), and it is demonstrably certain that our ordinary beliefs as to the objective nature of these latter phenomena are mistaken. But if our mind may deceive us in one such declaration, why not in more or in all? Convince me that colours, etc., exist objectively in bodies, or only show me that they may do so, and I will accept your position—but this it is certain you never can do.

M. Why can I not? I hold to the ordinary and common belief that the secondary qualities really exist in bodies just as unsophisticated persons believe them to exist.

F. What! You believe that the taste of beef exists objectively in the ox, that the smell of sea-weed would exist on the sea-shore though there was no sense-organ to perceive it, and that in like cases each incoming wave of the sea would still have its boom and the pebbles it draws back in receding, their hissing rattle?

M. Certainly! I am most fully convinced of all this—what is the absurdity or paradox in it which seems to strike you so forcibly?

F. Surely you must admit that all these feelings are only subjective sensations, produced in our organism by external things. We know that colour is but the result of the undulation of waves of light-rays of different lengths. How can that occult quality in the object which so reflects such rays be like the sensation they produce in our organism? But most absurd of all is your notion about smell and taste, which are manifestly purely subjective affections produced by different substances on our

nerves. How can the hidden cause of such affections which exists in things, be like their results in us? As well might you say, a red-hot poker is like the burn it inflicts or the pain it causes! This is too absurd on your part—you cannot really mean what you say! An ignorant rustic might think that the taste of bacon existed in his pigs, but not you!

M. Rustics are by no means so absurd as you appear to suppose. Do you think that any rustic imagines that there is a taste of bacon going about inside his pigs, or that he does not know that his feeling of taste is purely his own feeling, which a cold may deprive him of? He may have a difficulty in making you understand his ideas, but if you do come to understand each other you will find that both your ideas are substantially the same. This I have experimentally ascertained in several instances in my own case. A rustic knows as well as you do that the sensations of taste, sound, and colour, as sensations, are in him and not at all in external things; but he also knows that these sensations are caused by something in the things, of which something his sensations give him as good a practical notion as he can have, and so I myself believe.

F. But surely you admit that distant mountains which look purple are not purple, and that the things which appear to change their relative places as we walk along this museum do not change their places, in spite of this delusive seeming. The colours of the soap-bubble are not in the bubble, and yet the child thinks they are in it.

M. And the child is right so far as he under-

stands the problem. I am not maintaining that every child, or even every philosopher, is furnished with the means of knowing exhaustively all the absolute qualities of objects as they are in themselves. All I affirm is that the child and philosopher are alike furnished with a means of knowing truly a certain portion—it may be a very small portion—of the absolute qualities of things, and that though when the child says the colours are in the soap-bubble it has indeed an inadequate apprehension of the whole truth, it nevertheless has an indefinitely more correct apprehension of the whole truth than any man has who simply *denies* that the colours are in the soap-bubble.

F. It seems to me that he who denies is nearer the truth, for the cause of colour or sound is certain waves of light or air, and by thinking of the unknown objective causes of these sensations—which causes exist in bodies—in terms of 'motion,' we get much nearer to the truth than we do in thinking of them in terms of sensations, such as colour or sound.

M. You are not thus one bit nearer the truth than is the clodhopper himself! According to the system which you defend, motion is resolvable into muscular sensations, including those of relation. But you must grant that your 'muscular sensations' are at least as unlike the objective cause of your feelings of colour and sound as are the causes we spontaneously assign for them.

F. But do you not see that in the absence of organs of sense the world would have neither light nor sound, but eternal darkness would envelop such

perfectly silent motions as might be conceived as still continuing to exist.

M. Not at all! Darkness and silence are really quite as subjective as either light or sound. To think of such an unseen world as dark is therefore to express objective existence in merely subjective terms after all! Such a world would be neither light nor dark, but in a condition absolutely unimaginable by us, but one which we may far more reasonably symbolise as possessing light than as plunged in darkness. For all the objective conditions of light, save sense-organs, would, by the hypothesis, be present, while there would not be the objective conditions of what to our senses is darkness. Though all sensations would of course vanish in an insentient universe, the qualities those sensations make known to us may be known to beings of pure intellect, if any such there are. It is you and I who know these objects around us, not our eyes. How the objects could become known to an intellect without the help of any sense-organs we of course cannot imagine, since the experience is lacking. But can we understand how the qualities of bodies are made known to us with the help of sense-organs? Because, however, we cannot tell how intellect acts in this matter, is that any reason for doubting its declarations when they are self-evident? Our only appeal is to our reason, and reason does not tell us that our muscular feelings or feelings of resistance or of motion, are really more fundamental or objective than even such conceptions as 'intelligence' and 'will.' It may be convenient for various reasons so to express phenomena—as, for example, for the sake

of bringing them within the reach of mathematical calculation—but we must not suppose that by so doing we really explain them.

F. Do you then positively affirm the objective existence of the secondary qualities of bodies?

M. Certainly I do. You yourself have seen that cavils essentially the same may be brought against their primary qualities—cavils you disregard in the interest of science. But since the objective cause of secondary qualities is admittedly occult and unknown, there can be no reason for denying that there may be such conformity between it and the perceived sensation, that such sensation may be the most fit and proper way in which such occult quality can be brought home to our understanding. Though inadequate to tell us the whole story, such sensations may be the best, or the only practicable, way of making us know as much as is possible for us to know about such occult qualities. The colours of the soap-bubble are not merely in it as we imagine, but far more perfectly, just as every rainbow we see is but a fragment of the objective reality, the existence of which it serves partially to reveal. Thus our senses are imperfect but not mendacious faculties.

F. But primary qualities are much more readily and generally accepted as objective by men who think about such matters, than are the secondary ones. The shapes and numbers of things seem to be much more certainly apprehended than their colours, sounds, odours, etc.

M. I am persuaded that if you ponder over the matter you will see that no more really solid argu-

ments can be brought against the secondary qualities of bodies than against their primary qualities. Moreover, it is impossible to prove that our sensations may not give us the truest possible notion of their objective causes, and to think of those causes in terms of muscular motion cannot evidently be, as I before said, to think of them truly.

F. Mr. Spencer and many others speak of sensations as if we were passive; but Mr. Lewes recognises our activity in sensation, and thence concludes that the result of the activities of both subject and object (*i.e.* our sensation) cannot be like the object, because it (our sensation) is partly made up by the activity of the subject, which he calls 'the greeting of the spirit.' Admitting his theory, must not his conclusion be correct?

M. Not a bit! Our intellect has the power of subtracting its own subjective element from the result. Let the perception be conceded to be made up $x+y$; x being the ego, or self, and y the object. The mind has the power of supplying its own $-x$, and so we get (through the conjunction of the mind and the object) $x\ y-x$, or y pure and simple.

F. But have we this power?

M. Do you not know you have? Do you not know that when you see, touch, smell, or taste two apples, they are really two—that as to this fact of number, your intellect guards you from self-deception occasioned by the activity of your own being? This is wonderful, no doubt, but is it a bit more wonderful than the phenomena of our vision, consider them how we may; or our power of perceiving likeness

and unlikeness—a power no philosopher can deny that we possess ?

F. How then do you express your dissent from Berkeley, Hume, and their followers as to the nature of knowledge ?

M. I say that so far from the essence of a body consisting in its being perceived, its being perceived is a mere accident of its existence, and one which may be for ever absent. Who has perceived or will perceive the mountains on the other side of the moon ? Who perceived for untold ages these fossil reptiles only of late years disentombed ? Does want of being perceived impair the real existence of the millions of fossils yet undiscovered ? Instead of our knowing and perceiving nothing but our own ideas, I am confident we really perceive objects themselves.

F. Directly, or by a process of inference ?

M. Directly !

F. But those glass cases are not in my eye or yours ; nor are the vocal chords of my larynx in your ear, or yours in mine ! All we can receive, then, must be impressions, images, or representations of external objects, through which images or representations we may or may not receive correct notions of the objects ; while such images cannot be more like such objects than a picture can be like the object it intends to represent.

M. You have just expressed what I believe to be the fundamental error of the whole school, from Berkeley to Hume's most modern disciples. It is an error of the imagination, which results partly from the ambiguity of the word 'representation,' partly

from our knowing that an image of our external surroundings is formed within our eyes. But our faculties do not only furnish us with images or impressions of things, but by means of those images and impressions they *represent* a thing—that is, they MAKE THE THING PRESENT to the intellect. I do not see images of that row of bottles—I see the very bottles themselves. They are things made directly present to my mind by my faculties. I do not perceive any image or impression of them, though a variety of agents concur in producing the result. The clock is striking twelve, and now the public will come in and we must finish our talk. Well, in perceiving that striking of the clock, I can distinguish no less than seven objects, powers, and actions. Thus, there is (1) myself, the sentient subject; (2) my sensitive faculty as actively perceiving the sound (subjective sound); (3) my sensitive faculty as passively affected by the action of the object; (4) my organ of hearing, by means of which my sensitive faculty is affected; (5) the medium by which the influence of the object—*i.e.* of the clock bell—is transmitted to my organ of hearing; (6) the bell itself which sounds; and (7) that occult power and quality of the object which causes the transmission of the influence, and that occult power and quality is objective sound.

F. I have never heard the word 'represent' used in the sense of 'making a thing present.' If it can be taken in that sense it produces an altogether different conception from what I before had, and the argument of the idealist cannot be maintained. I think I thus see how we may have, as you say, direct

perceptions; and yet it seems to me we cannot, because——

M. If you object to the mere word, use another; but I think the term is well chosen. It is, however, the thing signified—the recognition of the fact of things being made present to the intellect—which I care about. But you were going to tell me why you think our perceptions cannot be correct.

F. No doubt our real, or supposed, knowledge of objects is immediate. If, for example, I see an object before me, my knowledge of its real shape and size is obtained by no piece of conscious reasoning, and cannot, therefore, be properly described as 'mediate' or 'an inference.' Nevertheless, the reflective assurance I may have that the thing seen is actually that shape and size, and not merely shaded and coloured so as to look as if it were, can only be arrived at by a more or less elaborate process of inference, and must undoubtedly therefore be looked upon as mediate. What I want to know then is whether in perception we gain an assurance, both immediate and reflective, of the existence of persistent objects, as we gain an assurance both immediate and reflective of the truth of a mathematical axiom?

M. I don't quite understand what you mean when you speak of an immediate, reflective assurance. The expression has a savour of self-contradiction.

F. I mean an assurance we may attain by reflection that a proposition is certain without proof. For example, 'Things that are equal to the same thing are equal to each other' is a proposition which my intellect both accepts immediately and also sees, after reflection, to be certain without proof.

M. I see what you mean; and I do not hesitate to affirm that in this sense we have both immediate and reflective assurance of the truth of our perceptions. But you must allow there is a distinction between 'attention' and 'inference.'

F. Certainly. I only call that knowledge inferential, which is obtained through some conscious process of inference—a process which, though perhaps not noted when performed, yet becomes evident on reflection. All knowledge which is really obtained by perception alone may be called immediate.

M. Very well! I, on the other hand, of course concede that whenever we deliberately search for evidence as to the truth of any supposed perception, and form a conclusion on the strength of evidence obtained, we infer. I have many times thought over the very point we are now discussing, and though we often do use inferences with reference to our sense perceptions, I am perfectly certain that I am capable of perceiving an object—say a horse or a tree—consciously, but without any particular attention, and also that I am capable of looking at it attentively, and making sure that it was a horse or a tree, yet without using any process of inference whatever, but merely by tightening my sensuous grasp, and carefully focussing, as it were, my sense perceptions. To explain my meaning, I must anticipate a matter not exactly in place in arguing as to the external world, but which, if you like, we may discuss hereafter. We have, in fact, two orders of faculties: one merely sensuous—one which we have in common with other animals; and one purely intellectual, as when we apprehend 'being,' 'truth,' 'goodness,' etc. Now

animals, it is plain, have sensuous perceptions, and these they can so associate as to seem to us to draw inferences—though all such actions on their part are explicable (as are many of our own) by the mental association of habitual co-existences and sequences of sense impressions. They also may perceive an object indistinctly and inattentively, or they may tighten their sensuous grasp of it and watch it. We also have such merely sensuous perceptions, and such sensuous associations simulating inference. But over and above these, we have our intellectual perceptions and true inferences. Our intellect then may—for I know mine does—perceive objects directly and inattentively and also directly and attentively, and no doubt our attentive perception is aided by sensuous association. But I need not point out to you that—since we have only consciousness to go by—it is absurd to call any action inferential, which is neither consciously perceived to be inferential when performed, nor seen on subsequent reflection to have really had that character. I unhesitatingly affirm then that, in perception, I can and do both gain an immediate assurance, and also (*i.e.* by attention) gain an augmented assurance, that the truth of my perception needs no further proof but is certain without it, and this without using any process of inference.

F. But surely the great majority of mankind not only thought, but still think, that they have an immediate perception that the sun and stars move, and therefore it is to me clear that speculative doubt as to the declarations of our senses is not only possible and legitimate, but is hardly to be avoided.

M. I say that it is to be avoided, and I deny

that it is legitimate, but I fully concede that it is possible. It is possible, as I have already admitted, to doubt even our own continued existence, and certainly that of an independent external world. I also frankly own it to be possible that our faculties, our senses amongst them, may be deceitful. But it is not barely conceivable possibility, but fact and evidence, that we have to inquire into; and though we know that the argument from the impossibility of a thing to its non-existence is final and conclusive, yet, on the other hand, we are equally sure that the mere possibility of an event furnishes no presumption, not even the slightest, of its realisation.

F. I am glad that you admit the possibility of our faculties and the testimony of our senses being fallacious, and I think this very matter of the apparent motion of the sun and stars shows they are fallacious.

M. Permit me first to remark in passing that you must admit the veracity of your faculties in order to prove them to be fallacious; for you could only prove it by the exercise of those very faculties and by trusting to that very veracity which you call in question. So the accuracy or deceitfulness of the testimony of our senses can only be tested by the exercise of the senses themselves, and if we are unable logically to prove their veracity because we must employ the same test, recollect we have already agreed that all things cannot be proved, and that what is self-evident needs no proof. Besides, the arguments of the upholder of the veracity of our sensuous and other faculties are consistent with his position generally, while the impugner of that veracity contradicts

himself, since the veracity of the senses is doubted by him on account of his acceptance of the testimony of his senses.

F. But surely the testimony of one sense may contradict that of another, and on that very account we may discredit both, since the testimony of one must be fallacious?

M. No doubt, if such is really the case; but I have never yet met with such an instance, though I have long looked for one. On the other hand, the harmony which certainly exists amongst the several senses is ever giving us stronger and stronger grounds for trusting them. How continually does not our sense of touch confirm what the eye seems to declare? Now, as to the external world, it would seem in the highest degree improbable that our senses should harmoniously conspire to lead us into the same error respecting it, since truth is but one, whilst error is manifold.

F. But you have wandered away from my special case into the general question, which I do not care to discuss further. Now I am convinced that men thought they had an immediate perception of the motion of the sun and stars, and yet in this their senses grossly deceived them for centuries.

M. But there is here no deception of the senses whatever; for this supposed perception was not a perception, but an inference too hastily drawn from true perceptions, as a little reflection will make obvious. Our sight gives us no information at all as regards motion itself, but only as regards change of relative position in sensible objects. Thus, when we are in motion ourselves, we may be utterly uncon-

scious of it save for jolts, jars, and other bodily incidents, which form no elements of motion but are only accidental accompaniments of it. As to objects round us we do not see motion in them, but only a change of position relatively to each other or relatively to ourselves. These sensible phenomena occasion our intellectual apprehension of motion and of movements in things, but that apprehension, reflection shows us, does not take place without inference. With regard to the motion of the sun, there really was this relative change of position, and of this change the senses give now, and always have given, information always the same and always accurate. No doubt, or, rather, most certainly, the relative change of place perceived does awake in our intellect the idea and perception of motion, but it does not, for it cannot, tell us where the motion is without examination and inference. The mere animal so associates together the sight of changes of relative position with correlative motions of its own body, as practically to apprehend that its prey is escaping, and to pursue and catch it. Such sensuous associations and perceptions exist also in us, and underlie our intellectual perceptions and inferences, but reflection enables us to distinguish these various, at first unnoticed, mental elements, and thus we see that the so-called perception of the sun's motion was a too hasty inference.

F. But you seemed to me at first to deny that such seeming perceptions were inferences; besides, are you sure we cannot see the sun move—see it sink below the horizon at sunset?

M. Although I say that consciousness makes

me certain we have direct perceptions of objects without employing inference, I do not mean to say that men do not often infer without noticing their process of inference, though when there has been inference, they can always (when instructed in such exercises) perceive it by reflection. Now this supposed astronomical perception is an instance of an inference, not noted perhaps at the time as an inference, but clearly seen on reflection to have been an inference. As to 'seeing the sun move,' who can do that? Fix your eyes on it at sunset, and you will see from second to second that it has more and more disappeared. But you do not see it move. As to this motion of the sun, the mass of men never think about it; those that first did so inferred that it moved, and their inference, embedded in language, affects every one, so that even you and I speak of 'seeing the sun set,' though we, at least, know very well that it is the revolving earth which gradually hides it. That which men's senses ever did and do make known is 'motion between the sun and earth'—change in the sun's place in relation to the earth—and such change in it really takes place. If I go to the other end of this hall, it is I who move and not the spermaceti whale over our heads. Nevertheless the place of the whale in relation to me has actually changed through my motion. The sense-perceptions of mankind were not and are not deceived as to the sun's motion, but their inferences were so, as they are every day about other matters. On the other hand, when I fix my mind on past acts of attentive perception, I can clearly distinguish between direct acts in which there

was no inference, and inferential acts not noted at the time of their performance as being inferences.

F. But you must consider the various optical illusions of the senses. Besides, men whose toes have been cut off occasionally seem to feel them still, and when two fingers are crossed and a pea is held between their crossed ends, we feel not one pea, but apparently two peas.

M. If our organisation ought to be so contrived as to guide us truly in the normal and ordinary conditions of life, it is impossible for it to be simultaneously so organised as to guide us truly under precisely opposite conditions. The human intellect being able so to arrange objects as to invert their ordinary impressions on our senses, we might be sure *à priori* that such inversion would also invert (so to speak) the effects produced. So much for our ingenious optical illusions! As to the results of mutilation and bodily distortion, could we reasonably expect our organisation to act normally under abnormal conditions? A hydra is capable of being turned inside out without apparently much inconvenience. If we could so undergo a similar operation, no doubt the world about us would bear a singularly modified aspect; but it seems to me that a man would be a grumbler who complained because his organisation was not so arranged as to give him accurate notions of things while he was thus introverted.

F. Still, I do seem to have a direct perception which is in fact erroneous, when I thus feel a pea with crossed fingers.

M. Let us consider the facts a little attentively. No one would affirm that the mere touch of a sur-

face can convey the impression of bulk and solidity; for this there must be added to it the sense of resistance. If, then, with the fore and middle fingers of my right hand I touch simultaneously two opposite surfaces and find I cannot bring my fingers together, I think (from long experienced sensuous associations of sensations) that an obstacle in the form of a continuous solid body lies between them—an obstacle situated to the right of my fore finger and the left of my middle finger; but this cognition, if present to consciousness, is an inference, not a direct perception. If it is a mere feeling not noticed by consciousness, it is a practical inference brought about by antecedent sensuous associations. If now I simultaneously touch an object with the same fingers crossed, the resistance experienced is on the left of my fore finger and on the right of my middle finger, and a sensuous inference thence arises that there is a solid body on the right of the middle finger and also on the left of the fore finger, and so there is. But these are positions impossible under ordinary circumstances to be held by a single body, and so I may hastily and incorrectly infer that there are two bodies, and such is the practical sensuous inference which results from long antecedent association of sensations. Therefore in such a phenomenon there is no real sense-deception.

F. What then is your final conclusion?

M. I am convinced that though it is speculatively possible that our senses should be fallacious, yet, as a matter of fact, it cannot be shown that when proper care and attention have been used in their exercise, they really ever do deceive us in their

testimony, and that the numerous instances adduced of so-called sense-deceptions turn out (when carefully examined) to be nothing more than hasty and inaccurate inferences from the true deliverances of sense.

F. What is it, then, which you think we do perceive when we perceive any ordinary object; what is there, for example, in your idea of a horse which is not a plexus of present sensations, together with a faint reproduction of antecedent sensations, including feelings of relation?

M. When I say 'That is a horse,' my meaning is, 'That really existing, solid, material, external (*i.e.* really distinct from myself) object is a living creature of an animal nature belonging to that group of beings which I distinguish from other animals by the term "horse."' In other words, I assert a judgment as to the essential nature of the object to which I call attention and which I conceive by a single thought. I also, in making the assertion, have, as I before endeavoured to show, the ideas 'being' and 'truth.'

F. Herbert Spencer would of course affirm that by the terms 'solid,' 'material,' 'external,' etc., you were merely affirming the classification of like feelings of relations with their like predecessors; but I admit you have shown, with respect to all these higher conceptions, that his system omits the essential part of each and is, as you say, 'Hamlet without the Prince of Denmark.' Nevertheless, when I say 'That is a horse,' I am not conscious of having the ideas 'being' and 'truth'!

M. I do not of course mean that you have them

in the sense of adverting to them explicitly, but only that they are really contained in your assertion implicitly. This is shown by the effect of contradicting either one or the other, as I before pointed out. If I either say, 'What you call a horse is a mere phantom of the imagination,' and so deny your idea of its being, or 'That external thing is not a horse but a camel,' and so deny your idea as to the truth of your assertion—in either case I contradict what you implied in saying 'That is a horse.'

F. But still by 'horse' or any such object you really mean the plexus of sensible impressions you have received.

M. Not a bit! When I say 'That is a horse,' my idea is one and has arisen in my mind by a direct natural process though it has, of course, been elicited through the incidence of a variety of sense-impressions of horses of different sizes, shapes, and colours. By 'a horse,' I mean one definite thing, though the images which attend the idea may be various and indefinite. That my idea 'horse,' is not a modified imagination, is made clear by the fact that the imaginations which have occasioned it may continue to persist in the mind side by side with the judgment they have called up. Let us take as an example the judgment 'Sunshine is needful to ripen fruit.' In making it I may vaguely imagine a scene with sunlight and fruit of one or more kinds, more or less ripe. But these images exist beside the judgment, and therefore cannot constitute it. Such images no more constitute the judgment than our 'limbs' and 'fluid' constitute our 'swimming,' though without such necessary elements we could not swim.

F. Nevertheless a successive series of slightly different images may generate another image of a generalised kind—an image which is different from each of the separate engendering images, though partaking of the nature of them all. This has been demonstrated by Mr. Francis Galton's universal photographs, wherein, by the superposition of slightly different images, we get such a generalised image. Such an image is doubtless generated in our own organism, and is a unity of its kind. It is, I believe, all the unity which is present in your idea of the horse.

M. But my consciousness tells me that in my idea of a horse I do not merely revive images blended into an indistinct unity. I doubt if we have any Galton image; I believe it is rather that our images have a centre of gravity, as it were, which itself is of course no image, but is a habit of the imagination. My idea 'horse' is something else than even a group of images hanging round such an invisible centre as I have suggested the existence of. This is shown by the fact that we intend to denote by it a unity respecting which a variety of distinct judgments can be affirmed. The idea is thus rather a concretion of judgments, with the perception that they relate to one thing, than it is the revived images, the presence of which help to sustain it. The judgments latent in it unfold that essential nature the existence of which we signify when we say 'That is a horse.' That assertion not only refers to a number of feelings of likeness and unlikeness, but also recognises these relations as being real and true. This even Mill allows, who tells us that the recognition of the truth of a judgment 'is not only an essential part, but the

essential part of it as a judgment; leave that out and it remains a mere play of thought, in which no judgment is passed.' In this way my consciousness makes me certain that I directly perceive external objects so as to understand that they really exist apart from and independently of our perception of them. Thus a secure basis for physical science is provided, and the validity of my own power of perceiving objective truth—a power we before recognised as necessarily implied in trusting memory—is further confirmed. The dreams of idealism may, I think, be thus effectually dispelled by a thorough analysis of what is given us in perception, and they are shown to be but dreams by their conflict with that conception of the action of causes in the universe which is implied in and underlies all our physical science, and in a special way all our scientific views as to evolution. But here comes John McAra with a telegram for one of us.

F. Good God, my dear fellow, my poor old guardian has met with a serious accident! He was always very kind to me except as regards his unreasonable opposition to my engaging myself to Emily. I must go to him at once.

M. Of course; but, my dear Frankland, how very silly and unreal our cavils and doubts about the external world appear to us at any serious crisis of our lives.

F. You may indeed say that!

That the idealism of Berkeley should be, as it is, the most popular form of philosophy is the natural result of three causes: (1) The first of these is the extreme ease with which it can be understood; (2) the second is the plausibility of most of its reasoning, its initial

assumption as to knowledge being once granted; and (3) the third is the fact that while it seems to carry its adherent into an intellectual region greatly above that of common men, it yet causes him no practical inconvenience, for he seems to be able to breathe and move there as freely as ever. It causes him no inconvenience because it professes not to contradict the declarations of common sense, but only to conflict with a sort of superstition promoted by the perverse ingenuity of antecedent metaphysicians. Berkeley's system in its purity has not, however, been adhered to. His central conception—the constant, direct action of God upon men's minds—has been dropped, and a modification of the system of Hume is what now prevails, especially amongst the cultivators of the physical sciences. This special modification of Berkeleyism is peculiarly attractive, because, while it enables men to advance sceptical arguments against any view whatever which they may wish to oppose, they may yet disregard its application not only to the affairs of ordinary life, but also to any scientific system they may be inclined to favour. This convenience, however, cannot be obtained except at the price of admitting a fundamental discord into our mental nature. Our senses are recognised as telling us of an external world really existing in utter independence of us, and scientific views and theories are constructed and accepted in harmony with this recognition, while our reason is represented as all the time declaring that this whole external world is rather to be regarded as the creation of our own minds. Moreover, since certain of our ideas, such as 'matter' and 'force,' are often (with more or less inconsistency) deemed more fundamental and satisfactory than others, the curious

result follows that we have a practical materialism as the outcome and result of a professed idealism. This result must, of course, be accepted if it is true, but is its starting-point—idealism—consistent with reason? According to the argument put forward in this chapter, idealism is not thus consistent, and for two reasons: (1) It contradicts that conception of the universe which the advance of science makes more and more convincing and secure; and (2) it asserts that we have not that direct knowledge of the world about us which our own minds assure us that we certainly have.

Reviewing our progress thus far, we may, it seems, affirm—if the reasons here urged are valid—that by building upon the direct declarations of consciousness as a foundation, we may be certain that we really know an external world and many qualities of independently existing things, and not merely our own feelings, or a mere amalgam made up from ourselves and from external bodies. In this way the teachings of science can be seen to harmonise absolutely with the dictates of reason, while on the idealist hypothesis they can only be accepted through an act of blind, unreasoning credulity.

According to the arguments hitherto advanced, we may repose securely in our spontaneous trust in the truthfulness of our natural faculties, when matured and employed with attention and care in the quest of real and objective truth. We may be absolutely certain that an external world really exists independently of us, and that its various parts really possess those very powers and properties which our senses and our reason combine to assure us such objects do in fact possess.

CHAPTER IV.

THE INTELLECTUAL WORLD.

ST. JAMES'S.

Can we know universal and necessary truths, and if so, what is the bearing of such knowledge on the questions of man's nature and origin?

THE first blush of dawn was showing itself over Whitehall and on the tower pinnacles of Westminster, every star in the west yet shining brightly, as Frankland came out from the brilliant hot ball-room to the balcony to enjoy the cool breeze which fanned the trees of St. James's Park beneath.

Frankland. Many thanks for waiting for me. I hope you have not been too much bored?

Maxwell. On the contrary. Unlike you, I have eyes and ears for more than one. I suppose you have just seen Emily and her mother off. Has the latter enjoyed herself? The first, of course, has. They have never been here before, I think?

F. They have both gone off charmed with their reception, which was just what they expected—the invitation was so kind and considerate. We are all also invited to the north for the autumn, where I am told I shall meet you also.

M. I hope so. Shall we stroll away together now?

F. Let us sit and chat a little in the garden first. We can get quietly down this way.

M. The seat under this tree will do nicely. Now

let me congratulate you on your engagement. What a change a month has made for you!

F. Who could have thought my old guardian would have been so softened by his narrow escape! I think when he consented, he imagined it was all up with him.

M. Never mind; he has behaved like a trump since. But do you recollect what we were talking about when the telegram came? What do you think about the reality of the external world to-night—or rather this morning?

F. Oh, don't be hard on me! But it is really curious how much more vividly than usual I now feel every patch of colour and every note. I don't think I ever felt so happy as I do to-night. There, they are playing the 'Manola Waltz'; don't I recollect it a year ago!

M. Yes, it is curious how much the animal emotions may intensify the actions of our organs of sense.

F. The animal emotions!

M. Surely, with your knowledge and love of natural science, you are not going to deny that all that is most attractive in nature—the bright plumage of so many birds, the brilliant tints of so many insects, the perfumes of our most prized flowers, and the melodies of our songsters—are all due to the action of the reproductive instinct and are the unconscious homage of organic nature at the shrine of Alma Venus? We are animals, and share their passions and emotions. Under present circumstances, then, the phenomena you speak of, though curious, are not at all exceptional.

F. Don't be offensive. I admit, of course, the truth of what you say, and I admit that some of my

feelings—such, perhaps, as those stirred up by the sound of that waltz—have a certain kinship with those which we may imagine to be evoked in animals by the love-notes of their kind. But such explanations are miserably, ludicrously inadequate to explain the phenomena of human love. There is an element in that which is wanting in the emotions of brutes, however keen they may be. Animals will recklessly encounter death in the pursuit of their desires, but the human being will, for love, voluntarily sacrifice his life, knowing all the while that his desires will be frustrated by so doing. I would willingly give my life if by so giving it I might avert some great calamity from Emily. I take it that the distinctive human element I refer to is an intellectual one.

M. Can you give me any other instance of what you would, I suppose, then call 'intellectual emotion'?

F. Certainly; there is the pleasant emotion one feels on at last seeing clearly the solution of a difficult mathematical problem. There is the approving feeling with which one contemplates an act of heroic and generous self-denial. Now that intellectual activity which is the essence of such emotions as these may, it seems to me, enter into and transfigure the animal element of our own tender emotion.

M. I fully agree with you, and will even go further. I believe that the emotions called forth in many persons by musical harmony of the highest kind, and those excited in us by beautiful scenery or by the contemplation of some ruin full of historic memories, have all a radically different origin from that to which is due our lower feelings, which we share with mere animals.

F. Yet they tell us that on the hypothesis of evolution all human feelings may be resolved into a desire for food, into a fear of being eaten, or into the reproductive instinct. I confess I have long felt this assertion to be unsatisfactory. Evolutionists tell me that when I take off my hat to any one, the fundamental reason of my doing so is a habit due to the inheritance from primitive man of an ancestral fear of being preyed on, killed, and eaten. But it seems to me that if an act of reverence I may perform now is—as they say it is—essentially the same kind of act as some ancestral ceremonious act, then the essence of the act must be the same in both cases. Now as to what was the essential nature and intention of the ancestral act I can know nothing save by remote inference, but as to what is the essential nature and intention of my own present act I have supreme certainty. I am quite certain that when I salute some persons—as, for example, Professor W. K. Parker—the essence of my act is the voluntary expression of my intellectual judgment—'that man deserves reverence from me.' I have much reverence for, but no atom of fear of, him. Any ancestral human act, then, however remote, must—if it was, as they say, the same kind of act—also have been the expression of a reverential judgment of some kind, and not the mere expression of a fear of being eaten.

M. Hear, hear! Since you have thus come to see the difference between certain higher and certain lower sets of complex feelings (emotions) in your own mind, I may fairly call upon you also to admit that we must possess cognitive powers of a different kind from those possessed by animals, for if our

merely animal emotions may be transfigured, as you well express it, into distinctly human emotions by means of acts of intellectual activity, that activity must be a kind of cognition different from what animals possess, or else their feelings might be similarly transfigured.

F. We must not go too fast. I should like to hear you enumerate these higher cognitive powers.

M. To do that clearly I must first mention the lower ones from which they are distinguished. As animals, we have of course all those powers of reflex action, felt automatic action, and sense-perception which animals have—powers such as those by which sneezing and breathing are effected, food swallowed, and our steps guided without thought in walking. We have also the power of associating feelings together, and so forming 'imaginations,' 'emotions,' and 'sensuous, or organic, inferences.' The last-named states are not true inferences, but are unconscious anticipations of phenomena which anticipations arise upon the experience of certain phenomena with which the anticipated phenomena have come to be associated by sensuous experience. In order that these associations should be formed, we need such power of memory as animals have, and, like them, we can become active when stimulated by feeling, and can express our feelings and communicate them by the language of the emotions. But, in addition to all these merely animal powers, we have (1) a power of forming abstract ideas, such as 'humanity,' 'truth,' etc.; (2) a power of apprehending not only existing objects, but also the fact of their existence; (3) a power of reflecting on our own being and consciousness;

(4) a power (by voluntary attention) of recalling, or seeking to recall, to mind past thoughts; (5) a power of uniting two simple intellectual apprehensions into an explicit affirmation or negation—that is, a power of judgment; (6) a power of induction; (7) a power of true inference; (8) intellectual emotions, such as those the existence of which you have recognised; (9) a power of expressing intellectual feelings and ideas by definite external signs—intellectual language; and (10) a true power of will. It is these te. last powers which I take to be our higher powers, which animals show no sign of sharing with us.

F. I am disposed to agree with you as to our having these two sets of faculties, but I feel a difficulty in understanding how it is we can have them, a difficulty as to how any difference of kind can exist upon the theory of evolution. Even in the evolution of the individual, the lower faculties naturally develop into the higher. We really know nothing at our birth—though we have lofty faculties as yet undeveloped—and assuming that the human race had (what evolution shows it had not) a definite origin, there is nothing to show that the race had at its origin more knowledge than has man the individual.

M. As to the origin of man, I will say a few words later. That is a matter of inference, not to sayspeculation. Let us first stick to and make sure of our facts. It is a fact that you and I, here in this garden now, have these two sets of faculties, however we may have come by them. This fact of co-existence, the presence of these two sets of faculties in man, is one of the most important distinctions in

the whole of psychology[1]—one without which you cannot, I believe, have a really rational psychology.

F. But surely the question as to the origin of our knowledge is a most important one. It is the question which has so largely occupied the attention of John Stuart Mill. It is this on which Herbert Spencer builds much of his system. It is surely impossible but that the doctrine of evolution must, if true, have a great effect on the confidence we may reasonably repose in our convictions and apparent perceptions.

M. I grant you that the question is very interesting and even very important, yet it is not the most important, nor need it concern us now. The question which most concerns us is the question what is true. How our perceptions as to truth have been acquired, is a very interesting but quite distinct and subordinate inquiry.

F. I am inclined to agree with Mill, and to accept as true and valid any belief which can be shown to be an original one—one, that is, not due to habit and association, but a genuine testimony of consciousness. For example, if we could ascertain, by observation and experiment, what is the first consciousness of an infant when it opens its eyes to the light, I should regard its declarations as the genuine testimony of consciousness and worthy of credit accordingly. The mischief is, we have no means of ascertaining what that can be. Show me any belief which has even probably not been sub-

[1] The reader who desires to inform himself further as to this matter may consult *Lessons from Nature* (John Murray), pp. 197 and 228.

sequently acquired and produced by the process of association of ideas, and I will be satisfied.

M. My dear Frankland, this extreme anticipatory reverence for babies on the part of one still a bachelor is wonderful! Why on earth should you and Mill credit them with so amazing an insight into mysteries about which even philosophers dispute? Why, again, should you think so very badly of any belief which is due to association—called forth by our organisation and the ordinary agglutination and sequence of ideas? Why are the laws which govern our original beliefs and what you call the genuine testimony of consciousness, so much more certain in their operation than those which govern association? The real question to be considered seems to me to be not how a thing comes to be believed, but how far and why it ought to be believed.

F. But you must surely allow that if it can be shown that a supposed belief is the product of mere custom, it thereby loses all claim to be considered an *à priori* truth and one we may unhesitatingly trust? The nature of the origin of a belief may not, as you seem to say, suffice to prove it true, but it may at any rate suffice to prove it doubtful or even probably false. How a thing comes to be believed must then, after all, be a very important question.

M. I grant you that if we had reason to believe that the universe was the work of a demon who delighted to deceive us and had abundant power so to do, such knowledge as to the origin of our beliefs would really have the effect you attribute to it. But if the universe be supposed to be the work of God, then

there is no earthly reason why association and custom should not be an appointed means for making us apprehend absolute truths. If we really know such truths at all, there must be some means employed for making us know them—why not those means?

F. Truths thus generated cannot at any rate claim to be regarded as *à priori* truths!

M. I should be the last person to deny or doubt the truth of certain *à priori* judgments, but the ground on which I believe them is not that they are *à priori*, but that they are (as I explained to you at Eastbourne) 'evident.' Not only is it not enough to say that a judgment is *à priori*, but the expression is more or less ambiguous. By saying that any judgment is *à priori* you might mean to say that it was independent of experience in the sense that experience did not prove it—a negative assertion which certainly would be no ground for believing it.

F. Well, I admitted before, as you remind me, that 'evidence' is and must be the test of truth, and is, I suppose, the ultimate ground on which we believe anything.

M. Precisely so! Those beliefs are 'evidently' true which can, on reflection, be seen to be so evident that we require no grounds at all for believing them save the ground of their own very evidence.

F. You make a great distinction then between (1) the investigation of the causes or antecedents which produce belief, and (2) the inquiry into the grounds or reasons which justify them?

M. I do indeed! The inquiry into the genesis

of belief is the business of psychology, the inquiry as to our grounds of belief is a very important branch of philosophy—one the task of which is to disengage and distinguish such ultimate grounds of belief. It is the business of this department of philosophy to point out the self-evidence of fundamental truths, but not at all to account for them. If, then, it is not, as it is not, its business to account for ultimate truths, it certainly is not its business to try and prove them. If it were possible for it to do that, it would only thereby defeat its own object, by showing that such truths are not ultimate but depend on others which prove them. Its business, in other words, is to point out truths which may be seen by their own evidence to be absolutely and universally true.

F. Absolutely and universally?

M. Certainly! Look at those stars. Some of them are, as you know, so distant that their light is the only evidence we have of an activity which took place hundreds of years ago, when that light which now strikes our eyes passed off from them. Yet what is necessary objective truth for us here, is also necessary objective truth in Sirius now, and was the same at any abyss of past time however vast.

F. But how can such a creature as man, an inhabitant for a few seconds of an obscure atom of creation, know such a thing as absolute, necessary, and universal truth—truth for all ages and for the remotest regions of space?

M. The difficulty you feel about it is merely the effect of a delusion easy to explain. But first tell me when you reflect on such truths, how do they

impress you? When you reflect, for instance, that two and two make four; that any two sides of a triangle are greater than the third side; that the whole is greater than its part; that you cannot both have your cake and eat it, or (in other words) that nothing can, at the same time, both 'be' and 'not be'—how do these truths strike you? Do you not see that these truths must be true anywhere and anywhen?

F. They certainly do strike me as true for all the places and times I can think of, but yet I have a feeling that it is impossible for man to attain to any absolute and really universal knowledge. This feeling of mine, you say, is due to an illusion easy to explain. I wish then you would explain it.

M. The illusion arises in this way. As a general rule, things which are very distant, or which happened a very long time ago, are known to us only in roundabout ways, and are more or less uncertain. On the other hand, our convictions concerning the things about us at any given moment can be tested by our senses, and we are certain regarding them. Thus it comes about that we associate 'uncertainty' with statements about what is remote, and 'certainty' with what is present. But we have already seen that 'self-evidence' is the supreme test; and if a proposition is vouched for by *that* test it can have no higher. If we were to doubt it we should cut the ground from under all certainty whatever.

F. But might not an intelligence of another and higher kind than man's arrive at different results by different processes?

M. Certainly different in the sense of more full

and complete. But if our intellect can be trusted at all, it must be trusted in what it declares to be the most certain of all, and such are necessary truths—truths like those I have instanced. A higher intelligence might greatly transcend ours in the extent and clearness of its perceptions, but it could not contradict ours—otherwise we ourselves know and can know nothing, and it is no use talking.

F. How is it, then, that I have doubted about such truths, and about my knowledge of them?

M. From want of reflection and from want of reaching through the concrete to the abstract. A man, not a philosopher, may doubt the universality and necessity of any abstract proposition (such, for example, as 'that a thing cannot both be and not be at one and the same time'), but he cannot doubt as to the impossibility of he himself being now both in the planet Jupiter and out of it. He cannot really doubt as to the impossibility of his having been present at the battle of Hastings and also not having existed till the present century. Any man who really doubts as to the impossibility of these contradictory concrete facts—a man who doubts whether, if his legs were cut off, they might not at the same time remain on—has a mind in a diseased condition. Yet the abstract proposition—the principle of contradiction—is but the summing-up of all possible concrete facts of this kind.

F. Is not this very much like Herbert Spencer's 'universal postulate'—I mean his principle that we must accept as true, propositions we cannot help thinking because we cannot imagine the contrary?

M. No. That is a very different thing. To say

that we cannot conceive the contrary of any proposition is a mere assertion of impotence, not a recognition of an active power of positive perception, such as we all act upon in such matters. There are things which you cannot think, merely through an impotence —a negative, passive inability—to think, as when you cannot think seriatim of the units which would make up a million; but such an impotence is a very different thing from actively seeing that anything cannot be because it is positively impossible. This is a most important distinction, which I would particularly recommend you to think over and carefully note. In the one case we do see clearly that a thing is impossible, in the other we merely do not see that it is possible. Thus we do see clearly that it is impossible for a square to be round; on the other hand, we do not see how it is possible for the universe to be finite, but this by no means compels us to think it is infinite.

F. How can we get such knowledge—how can we ever come to see the positive impossibility of anything?

M. How can we get any knowledge at all? How can we come to see anything whatever? How can molecular vibrations, or other occult powers of bodies, cause in us a sensation of sweetness, or of blueness, or of musical tone? In these matters all is alike mysterious or a very simple matter, according as you view it. On the occurrence of certain changes in our nervous system we have an innate power of feeling these sensations. On the occurrence of certain sensations (actual and remembered) we possess an innate power of perceiving external objects and

having ideas. On the occurrence of certain perceptions, we have an innate power of recognising our own existence, past and present. Similarly we have an innate power of perceiving universal and necessary truths when the occasion presents itself. We learn them through experience, as we learn other truths. As when a mental image arises in our memory we may become aware it represents a past experience; so, on a given truth entering our minds, we may become aware that it is a necessary one. There is really no more difficulty or mystery in the mind's perceiving that two and two make four, and must do so, since they must make four, than there is in its remembering that we have been to Naples, if we have been to Naples; or that a sensation is one of sweetness when it is so. The fact is so, and we perceive it to be so; and the act by which we do this is no more really marvellous in one case than in another; or, rather, every act of knowledge is alike marvellous. We know things, and we know that we know them. How we know them is a mystery indeed, but one about which it is perfectly idle to speculate. It is precisely parallel to the mystery of sensation. We feel things savoury, or odorous, or brilliant, or melodious, as the case may be; and with the aid of the scalpel and the microscope we may investigate the material conditions of such sensations. But how such conditions can give rise to the feelings themselves is a mystery which defies our utmost efforts to penetrate. Yet because we cannot discover this, we never doubt our sensations. Neither should we doubt our intuitions as to necessary truth. To do so is not to be exceptionally intellectual, but

exceptionally foolish. It is to commit intellectual suicide, since the dictates of the intellect are (as I urged on you before, and as you admitted) ultimate and supreme, and discriminate, judge, and ratify the apparent testimony of the senses. To our intellect, our sole ultimate appeal as to truth and reality must be directed.

F. But you recollect the instance of Clifford and Helmholtz's views as to the changed perceptions concerning necessary geometrical relations which would be induced in beings living in very peculiar conditions. They imagined creatures living on the surface of a sphere and entirely devoid of thickness, so that they inhabited a space of only two dimensions, length and breadth. These creatures were supposed to have experience of lengths and breadths in curves, but none of heights or depths or of any straight lines. Now Helmholtz and Clifford declare that our geometrical 'absolute and necessary' truths would not appear to such creatures to be truths at all, and therefore (these writers conclude) the geometrical truths which appear to be universal and necessary cannot really be such.

M. Here we have once more what is equivalent to our hydra turned inside out. Let it be granted for argument's sake that the geometrical truths referred to really are universal and absolutely necessary, yet creatures so extraordinarily defective as those supposed, might well be unable to perceive truths which more perfect beings (such as men) can perceive. It is probable that such creatures would have no conception at all of the three dimensions of space, and that their geometrical knowledge would

therefore be most limited. But anyhow there is nothing to show that, if such creatures could conceive of straight and parallel lines at all, they would not perceive the impossibility of two parallel ones ever meeting, just as we can perceive the necessary results of the very peculiar state of existence imagined for them. How could Helmholtz and Clifford tell for certain what would or would not necessarily be the perceptions of their imaginary creatures unless those professors themselves knew the certain and absolute truth about it? Either what they say need not be true, or their very assertion demonstrates what they would deny. If they affirm that their own representations must be absolutely true, they must think that they perceive (and they must therefore implicitly assert the existence of) absolute, necessary truth, or else their own argument itself falls to the ground.

F. If your argument is valid, and I confess I do not exactly see how to evade it, there must be objective conditions in things, which conditions correspond with our subjective perceptions of absolute and necessary truth, and such subjective conceptions would necessarily have objective validity. Yet how many false persuasions there are—how many subjective conceptions which seem certainly true to individuals, can have no objective validity since they are mere mistakes!

M. Of course there are such things as individual aberrations. A man would be a fool indeed who denied that there were any fools besides himself. But the delusions of individuals do not affect 'reality' for other people, and even deluded men often recognise that their false persuasions are delusions. The

truths I refer to are truths which are the same for all men, and certainly existed ages before the birth of any individual man. With regard to such subjective conceptions as these, there are corresponding external relations, and on account of their correspondence we may distinguish such 'external relations' as 'objective concepts,' since they are that in objects which answers to our abstract ideas.

F. A queer term! But I will not dispute about a name if you can only show me that something corresponding to it really exists. If you can show me, for example, that there are what you call 'objective concepts' which do correspond with my subjective concepts of different kinds, I shall be much surprised.

M. In the first place you must admit, since you have given up idealism, that we do recognise the truth of certain statements (concerning matters I call necessary and evident) as being true of things and not merely affections of our own minds. That such is the case is shown by the fact that we always feel confident that they will practically answer when acted on—and they do answer. Geometrical necessary truth tells us that we shall certainly go out of our way in walking home (and I think we had better start without any more delay) if we turn up beyond the Athenæum instead of turning up by the Carlton. The clear comprehension of a single triangle or a single grateful act, enables us at once to perceive a number of necessary objective relations of such a figure or of such an act.

F. And amongst them are those which tell me I ought to accept a hint from your illustration, and not keep you any longer; so here we go. . . . I

admit, of course, that there are relations which seem to exist simultaneously both in the human mind and in the external universe.

M. That is what I mean by the correspondence between objective and subjective concepts.

F. But these things exist in very different ways in the two cases. As they exist in our minds they are, of course, 'concepts,' but their objective existence consists of 'real relation between and in things.'

M. Of course. I only call these external objective relations in things 'external concepts' because it is with them that 'subjective concepts' correspond, and this term forcibly expresses that correspondence. You said you did not care to dispute about the word, and I see you agree with me in meaning.

F. I certainly do say that in apprehending such truths as that 'two sides of a triangle are greater than the third,' etc., I also apprehend that the cause of such truths does not lie in my own understanding, but in external nature.

M. Just so. If there were not objective concepts corresponding to our subjective concepts men could never converse together intelligibly or convey to each other any information whatever. There are therefore many relations in external nature which our intellect has the power of directly apprehending on the recurrence of certain sense-impressions. These relations do not merely exist in our subjective impressions, or merely objectively in the things which produce those impressions, but in both simultaneously. They exist in our perceived impressions as forming part of a universe in which such necessary relations reign. Thus the reason of the individual

man may be seen to have a participation in that universal reason which finds mute expression in the irrational universe, and express recognition in the human mind.

F. The cause of our perceptions being what they are, is doubtless partly due to the nature of our own being and partly due to the nature of the external world about us. But what is the 'objective concept' which corresponds to that 'subjective concept' of ours which we express by the word 'cause'? You will no doubt affirm that 'everything has a cause;' but has it? If, however, it has not, what then becomes of your alleged correspondence between subjective and objective concepts?

M. But everything has not a cause. My intellect certainly makes no such affirmation as that everything has a cause. What does seem to me evident, however, is that no change in any present existence can take place without a cause, and nothing therefore ever can or ever did arise—since the greatest change must be that from non-existence to existence—without a 'cause.' I am persuaded this is no mere subjective fancy, but a real condition of things. How does this appear to your mind?

F. Certainly when I see any change I look for a cause of that change. May not this, however, be, as Hume said it was, the mere effect of custom?

M. Now you have slipped into psychology and the question of the origin of ideas—a very interesting inquiry, as I said before, but one which is irrelevant when one's object is to investigate the truth of ideas. Tell me what your own mind says to you now as to this matter. Is it or is it not clear and evident to

you that every change does and must always and everywhere require a cause?

F. It certainly is; but still I should like to know how I got this idea.

M. In various ways. By your consciousness of your own voluntary bodily actions and the action of your will, and by a multitude of instances of physical causation which you have seen again and again since your infancy—such as trees blown by the wind, pebbles pushed by waves, marbles duly propelled by deftly applied impulses, birds brought down by a gun, etc. etc. The experience of things such as these has, I believe, given you your idea of 'causation.'

F. But I have never seen or felt 'causation,' but only 'sequence.' I have seen one thing or event follow after another, but not any sort of inflow of influence from one thing into another; and yet you seem to imply the existence of some action of the kind.

M. I not only imply it, but I distinctly assert it.

F. Well, I am positive that I have never seen or felt any such inflow of influence. My senses tell me absolutely nothing about its existence. You speak of my consciousness of what passes within myself when I make a voluntary effort; but when I move my arm all that I really feel is an antecedent, which is an act of will, and a consequent, which is the motion of my arm. That which, according to you, is causation—the transmission of force to my arm—altogether escapes me. That it does so escape my notice is certain, for there are a number of intermediate nervous actions between my act of will and

my arm's movements, and it is these nervous actions which are both the immediate cause of the movement and the immediate results of my act of will. Yet of the play—even of the very existence—of these nervous actions I am profoundly unconscious. Can we then possibly, in this instance, be sensible of the transmission of force—as a cause—from the act of will, when we are not even sensible of the existence of the effect which it has caused?

M. What you say is most reasonable and just. We never see or feel the action of physical causation, for the very good reason that that action is invisible and intangible. But although your senses cannot perceive it your intellect does. 'Cause' is one of those intellectual ideas (like 'unity,' 'number,' 'existence,' 'possibility,' etc.) which the intellect spontaneously gains through the incidence of sense impressions, and which is conveyed to it by, though it is never contained in, them; it travels as an outside passenger. But though your senses can take no cognisance of this inflow of influence, wherein causation exists, there is, nevertheless, one phenomenon of consciousness wherein this inflow and action are actually perceptible to us.

F. Indeed! I should much like to know what it is. I have never even heard of the existence of such a direct perception of causation.

M. The perception I refer to is our perception of the inflow of the influence of motives upon our will. When I resolve from a certain motive to perform any act, I am conscious not merely of the existence of a certain antecedent state of things, which is named a motive, and of a certain consequent,

which is my act of resolve, but I am conscious of the antecedent as a motive—that is, as something moving me. I know and feel that it is active, and is exerting an influence upon me; that it emits, as it were, a force which is stirring my will. We have, I think, a more or less similar experience of force whenever anything resists our will. In the latter case the influence is antagonistic to an act of will already formed; in the former case, the influence excites towards the formation of such an act of will. However, what I want you to be sure about is that here and now you do, as a fact, actually look for a cause of any change which you may perceive, and that your intellect justifies this action of yours by asserting (as an evident, absolute truth) that for any change some cause is necessary; also that anything which from its nature cannot contain within itself the sufficient cause of its own existence must evidently have had a cause. Suppose you see a definite series of changes taking place in a certain special order, *e.g.*, regiments marching past in a review, are you not certain that there is a cause not only for each action, but for the whole series of actions thus grouped into an orderly, serial whole?

F. Certainly I am.

M. Reason also justifies that certainty of yours by asserting as an evident, absolute truth, that if any series of changes takes place according to a certain order and mode of sequence then a cause, either external or internal, is needed to account for that order and mode of sequence of the series.

F. How do you mean external or internal? Give me an instance of both.

M. Well, the soldiers' march past has evidently a cause external to the individual men, namely, he who directs and commands the review. So again, such a series of changes as result in the growth of a beach of pebbles of regularly graduated sizes, like the Chesil Bank, has a cause or causes external to that bank, namely, the sea's waves modified by currents, and the shape of the adjoining coast. On the other hand, in the series of changes which make up the growth of an oak from an acorn, we evidently have, as a cause, an internal power of response to the action of environing agencies, and from the combined action of both, the oak results. Here we have an internal cause.

F. So far I am with you; and I am confident that the cause of the highest 'tender emotion' is something different from the mere desires and fears of brute animals. We have not finished that matter, and I should like to finish it before we sleep.

M. 'Still harping on my daughter'! The theme is well chosen. You are, I think, willing to admit now that we do perceive some truths which are absolute truths of things, and not merely truths for us. I am sure you believe Emily to be 'true,' and you are persuaded she is a good girl.

F. Persuaded! I know she is—one of the best of girls!

M. You mean she will give you pleasure and make you happy?

F. She will do both; but that is not what I mean when I say she is good.

M. You mean that she has such strongly sym-

pathetic feelings that she will be ever ready to sacrifice herself to the tribe?

F. Confound the tribe! What do you mean?

M. Rather tell me what you really signify when you say she is 'good'?

F. I mean that she is ever ready to do her duty, and is a girl strongly possessed by the idea of duty.

M. What is duty?

F. Duty is that course of conduct which tends to benefit mankind, and is prompted by a stronger regard for that which is beneficial to others than for that which merely benefits self.

M. So she is ready to sacrifice herself to the tribe after all! But suppose you perform some action with the intention of injuring others, and suppose you do it so stupidly that you really benefit them; have you, in performing such an action—thus practically beneficial—done an act of duty?

F. I should say, 'No'; and the late Professor Clifford would have said, 'No,' for all that he was such a thorough Darwinian utilitarian.

M. Are you quite sure you apprehend the full meaning of your Darwinian and agnostic friends?

F. I think I do, but, of course, I may not. Tell me how you understand their meaning with regard to 'duty' and 'goodness.'

M. Their view is that, in spite of the present differences between the ideas 'pleasure' and 'duty,' they are, nevertheless, one as to their origin—an origin consisting ultimately of pleasurable and painful sensations. Moral conceptions, they say, have been evolved from pleasurable sensations by the preservation through long ages (in the struggle for

life) of a predominating number of such individuals as happened to have a natural and spontaneous liking for practices and habits of mind useful to their tribe or race, while individuals possessing a marked tendency to contrary practices and habits of mind were destroyed. The descendants of individuals so surviving (because fittest to survive) have, they say, inherited a strong liking for such useful habits of mind, and at last—finding this inherited tendency thus existing in themselves distinct from their tendency to conscious self-gratification—have come to regard it as something fundamentally distinct, innate, and independent of all experience. In fact, according to this school, the idea of 'right' is only the result of the gradual accretion of useful predilections, which from time to time arose in a series of ancestors naturally selected. In this way 'morality' is, as it were, the congealed past experience of the race; and 'virtue' becomes a sort of retrieving, which the thus improved human animal practises by a perfected and inherited habit, regardless of self-gratification, just as the brute animal has acquired the habit of seeking prey and bringing it to his master, instead of devouring it himself. 'Conscience' is thus (according to the teaching of this school) but an accumulation of traditional feelings of utility; 'right action' is but a form of self-seeking; and our 'perception of right' is but a modified feeling of pleasure which has come to mistake itself for something higher.

F. I think certainly that the Darwinian view is fundamentally what you say, though its supporters express themselves differently. But what do you yourself believe 'duty' to be? I should like to

hear you fully express your own view in a manner parallel to your expression of the other view.

M. In the first place, I should say that 'virtue' and 'utility' are ideas not only fundamentally distinct, but so far in natural opposition, that the existence of utility in an action may now and again detract from its virtue. So essential is the distinction that, not only does the idea of 'benefit' not enter into the idea of 'duty,' but we even see that the very fact of an act not being beneficial to us makes it the more praiseworthy. Its merit is increased by any self-denial which may be necessary to its performance; while gain tends to diminish the merit of an action. It is not that the absence of gain or pleasure, benefits our neighbour more; it is that any diminution of pleasure which circumstances may occasion, irrespective of any advantage thereby occasioned to our neighbour, in itself heightens the value of the action. That, therefore, cannot be the substance of 'duty' which increases 'dutifulness' by its absence. In the second place, it is evident that 'good intention' is of the very essence of an act of duty, and not 'good results' nor 'pleasurable feelings felt in its performance.' I do not mean by this to deny that there is a primary, objective goodness in the nature of a virtuous man's action, but, with our limited knowledge, intention is our test. No action done with a bad intention can be good, whatever its result. You have admitted that if a man, intending to do harm to another by a spiteful act, really benefits him thereby through some miscalculation, his spiteful act is not made into a 'good one,' or 'an act of duty,' because it happens accidentally to turn out well.

F. But I cannot admit your explanation of the meaning of the words 'good' and 'goodness.' Surely what they really denote is correspondence with some proper and intended end. When we call a knife, a gun, a horse, or a pair of boots 'good,' we mean that they are well fitted to serve the purposes for which they were intended; and the same meaning applies to a racehorse, a baker, an architect, a judge or a bishop, whenever we speak of any of them as being 'good' of their kind.

M. 'Good' and 'goodness' have two meanings, and it is therefore necessary clearly to distinguish between 'material' and 'formal' goodness. True goodness, that which contains the essence of the idea, is what is formally (*i.e.* absolutely) good; and the other kinds of 'goodness' are so called by a more or less close or distant analogy. To see in what true goodness consists, you must analyse some good action—such as an act of gratitude—and then you will see that its essence is neither 'pleasure' nor 'conformity to an end,' but a simple and inexplicable quality termed goodness. Thus, let us suppose that a benefactor, A, rightly thinks that an introduction to a certain career will be a benefit to his daughter, and therefore asks aid for this from one, B, whom he has greatly benefited. B mistakenly supposes the introduction will injure the girl, and therefore complies with the request and does benefit her. The action of B is then materially, but not formally, good; but it would have been both had his intention been benevolent. Neither the giving of pleasure to A or to his daughter or to himself will make B's malevolent action a good one; nor would the giving pain

to A, to his daughter and to himself, have prevented a refusal on B's part from being formally 'good,' did B think that the introduction would be really injurious to the girl. Conformity to no 'end' will by itself affect the character of the act, unless it is recognised that the true end of all voluntary action is to act in conformity to duty—to follow the right order. But if we ask, 'Why should we conform to duty, and follow a right order?' there is no answer but that 'it is right' so to do.

F. There is another answer: namely, the answer, 'It is your true interest to do so.'

M. That is abandoning the whole ground, unless you are prepared to say that there is an ethical principle which makes 'following our true interest' a duty, and, according to that principle, we should follow it not because it is our interest, but because following our true interest is right. It is indisputable that the basis of every ethical maxim must itself be ethical.

F. But must not a formally good, grateful act give pleasure to the performer of it?

M. Not necessarily. It may be a most painful act; and the more painful it may be the more strikingly apparent is the gratitude implied in its performance.

F. But if 'good conduct' need not make you happy, it must tend to make somebody happy, here or hereafter, or it is not 'good.' Analyse it as you may, pleasure somewhere or at some time to some being or beings is an inexpugnable element of the conception. It is as much a necessary form of moral intuition as space is a necessary form of intellectual intuition.

M. I have shown you that an act of gratitude may be virtuous and yet make no one happy here. Nevertheless, that good conduct and happiness in fact ultimately coincide I for one have no manner of doubt; but this has other implications too wide to enter upon now. As to your comparison of the inseparability of the idea of pleasure from moral intuition, with the inseparability of the idea of space from physical intuition, I reject it altogether. I have, I think, sufficiently shown you that the ideas 'right' and 'pleasurable' are absolutely and fundamentally distinct. Nevertheless, ideas essentially distinct may be accidentally and in fact conjoined, as are the ideas space and time. These are fundamentally different, yet the latter so attends upon the former, that it is impossible to have a conception of extended things without a latent idea of the simultaneity of their extension, and therefore of time also.

F. But to show that 'pleasure' is of the essence of good conduct, imagine consequences reversed. Imagine a world in which all conduct such as that we call 'good,' should tend to make everybody wretched. No one would then say we ought to do 'good' things.

M. My dear fellow! Conceive of a world in which a line has no length, a triangle has four sides, in which sweet things taste bitter, and in which the whole is no greater than its part! In such a world what would not happen? But such a world is an absurdity and an impossibility: so also is your supposed immoral world, for in it we should have the contradiction that that 'ought not to be done' which 'ought to be done.' Such a speculation is idle and,

for reasons that I have not time to go further into now, is really impossible. If you admit that fidelity to its end, is the true meaning of 'goodness,' you must allow that a purpose underlies all human life, and such an implication will carry you very far. Now, what is the end towards which human action should, in your opinion, be directed?

F. To the making the life of every individual man entire in length and breadth—to the well rearing of children; and to the doing of all this in such a manner that the advance of some shall not hinder that of others, but that all shall mutually aid each other in such advance. This is what men ought to aim at.

M. What do you mean then by 'ought'?

F. 'Ought' is an obscure feeling of compulsion —nothing more!

M. 'Ought' is no such feeling, but rather implies an intellectual perception of fitness of that special, unanalysable kind we call 'moral.' Otherwise, why should I do all you say I ought to do? Am I to do it because I see it will make me happier?

F. If you examine into the matter, you will probably see that such conduct will make you happier. But apart from that, the survival of the fittest has given men a natural bias towards and a liking for such conduct.

M. Has it? With very numerous and notable exceptions then! But suppose I grant what you say, and then—having accepted your view—wake up to the fact that I am thus the slave of an inherited tendency which is apt to make me neglect what seems my own interest in order to serve others, and this without the prospect of any future recompense

whatever! Am I to continue to be a slave, and now a conscious and voluntary slave, because before, I was befooled by nature; or am I at last to use my reason to secure what seems to be the most for my own exclusive advantage?

F. With the accumulated force of countless millions of years of evolution behind you, you should trust to the beneficial effect of the prejudices it has made ingrained and inherent in your nature. You should act, therefore, according to your inherited moral tendency, and not according to the dictates of your individual judgment or to your own advantage.

M. And this in all cases?

F. In all cases.

M. Thank you! Then I am even to sacrifice my life for the good of others, or for a great cause, in spite of the conviction that a future existence is a baseless dream?

F. It is right, it is noble, so to do!

M. The majority of mankind, if possessed by such a belief, would deem themselves simple fools if they did so. Those who were thus actuated to avoid self-sacrifice would be the ones to survive and leave children behind them, and thus these views would become naturally selected. I can understand a stoic. I can understand a man who affirms that there is something absolute and supreme in morality, and so is prompted to perform unrequited self-sacrifice, even of life. I cannot, however, understand—I do not believe in—a man who is convinced that such noble conduct is but a pursuit of animal pleasure which has lost its way and mistaken itself for something else, and yet persists in continuing

conduct which on this view is at once ignoble and insensate.

But, tell me, do you not admit the truth of what I have said about a really 'good intention' being necessarily present in all good action, in the highest sense of that term?

F. I do admit it; but still I do not see why the two ideas 'pleasure' and 'duty'—which are now so divergent—may not have had a common origin.

M. It is abundantly evident that no collection of sensuous experiences, or of ideas of 'utility' or 'pleasure,' can generate the idea of 'goodness,' as I think you will see in a minute. All our knowledge is either self-evident or is legitimately deduced from what is self-evident; and this, of course, applies to our ideas of right and wrong, as well as to all the rest of our knowledge. Now, if you or I know certainly that some definite line of action is 'right,' the proposition which declares it to be right must either be self-evident or must be deduced from other propositions as to what is right, one of which at least must be self-evident, or else we can have no basis for our knowledge whatever about 'right' or 'wrong.' In other words, the general propositions which lie at the root of any ethical system must themselves be ethical.[1] This truth cuts the ground from under—renders simply impossible—the view that a judgment as to moral obligation can ever have been evolved from mere likings and dislikings, or from feelings of preference for tribal instincts over individual ones.

F. How was it then that John Stuart Mill laid down that the principle regulating our actions should

[1] See Mr. Balfour's *Defence of Philosophic Doubt*, p. 337.

be the production of the greatest amount of pleasure to all sentient beings?

M. I am glad you have referred to Mill, as he supplies us with an excellent illustration of the truth of my position. If Mill had been asked why we should so regulate our actions, he must have replied by asserting his ethical principle to be self-evident, or by grounding it upon some other evident ethical principle. But Mill is singularly inconsistent, and quite refutes his own system in the most complete and absolute way with respect to this very matter.

F. Tell me where he does this.

M. In his work on Sir William Hamilton,[1] wherein he very properly says that it is better to go to hell than to call a bad god 'good.' Admirable, however, as is his declaration, it is singularly inconsistent with his utilitarianism. For if actions are 'good' or 'bad' merely according to the pleasure or pain which may follow them, then if by flattering a bad god we could all secure a maximum of pleasure, while otherwise we should all incur endless torment, then certainly, on utilitarian principles, such flattery would be good. It is a curious position to take to say (as Mill says): happiness for all men should be the end and aim of their actions, and in pursuit of that end and aim they may fitly accept infinite, final, and universal misery.

F. Mill is, I allow, not unfrequently inconsistent with himself; yet the very passage you refer to shows how strongly he was imbued with the loftiest moral sense.

M. Very true; and I will even say of fine moral

[1] P. 103.

perception also, which is a very different thing. Feelings and judgments are poles asunder. It has been suggested that a swallow with a late brood if she yielded to the migratory instinct and abandoned her young, might (if endowed with sufficient imagination) feel agony at the reminiscence of them. She might do so, but in that feeling there would be no rudiment of morality if she did not judge she ought not to have left them. In the same way, no preference for the interests of the tribe over the interest of self, nor any anger at the absence of such preference, is moral, unless there is a judgment that such a preference is 'right.' The liking or disliking (and therefore the frequent practice or neglect) of certain actions is one thing; the act of judging that such actions (whether pleasant or unpleasant) are 'right' or 'wrong' is an altogether different thing. A man may judge that he ought to break off with a mistress, without her being the less delightful to him, or may perceive clearly that he has been right in giving up a legacy, though doing so may have pinched him severely, and may have brought discomfort on his nearest and dearest.

F. 'Morality' is, then, in your opinion, a pure matter of intellectual perception and conduct. You make small account of any feelings we may have about the matter. Yet I have always understood that the essential trait in our moral consciousness is the control of some feeling or feelings by some other feeling or feelings, and our 'moral sentiments' appear to me to be very important things.

M. They are unquestionably highly important as aids to conduct, but they are accessory to, and by

no means the essence of, 'morality,' which is fidelity in action to our ethical judgments. The idea of goodness is generally accompanied by a feeling of complacency, but it need not be so accompanied. In a perfect nature, what is virtuous is pleasurable, but in a maimed and imperfect nature it may be very painful. 'Moral feeling' is a sort of 'rational instinct,' and its existence is necessary to form a perfect man, but moral truths may be both clearly perceived and hated. This should never be forgotten.

F. Then you are convinced that the social instinct cannot be the basis of our moral perception?

M. If it were, how could we ask, as we do, whether society in certain cases is 'right' or 'wrong?' How could we ask, as we may do, 'why should we obey society at all?' We demand a rational basis for social claims. If the social instinct were the basis of morality, it is certain that courage must have come to be regarded as supremely good, and cowardice as deserving of the deepest moral condemnation. And yet what is the fact? A coward feels probably self-contempt and that he has incurred the contempt of his associates, but he does not judge that he is 'wicked.' We despise, avoid, or hate a coward, but we know that his cowardice may be due to defective organisation, and we can clearly understand that it is possible for a coward to be a more virtuous man than some other who abounds in animal courage.

F. But I think you exaggerate the action of intellect and of consciousness in right action. The most beautiful character to which a man can attain

is that of doing good immediately and spontaneously without thinking about it, not that of balancing and weighing, and only acting after more or less doubt and hesitation.

M. But you cannot mean that the absence of thought is the cause of this beauty? If you do, you will have to admit that if I can perform beneficial acts while walking in my sleep, I thereby attain this apex of moral beauty. The 'not thinking about it,' therefore, is not that which makes the supposed action beautiful. Its beauty consists in its being the outcome of a habit of mind which has been acquired by many antecedent good actions. You will not pretend that the man got himself into this habit of mind without previous acts of conscious will distinguishing what was right from its opposite. A man cannot love justice without being able to distinguish it from injustice; and to love 'moral beauty' a man must know it. The idea of good which the man has in the past apprehended must be influencing him at the time of his action, whether he adverts to it or not; otherwise, the action is not a virtuous one. The merit of the virtue which shows itself in even the spontaneous indeliberate actions of a good man results from the fact of previous acts of his having been consciously directed to goodness, a habit having thus been formed. The more thoroughly a man is possessed by the idea of duty, the more his whole being is saturated with that idea, the more will goodness show itself in all his, even spontaneous, actions, which thus will have additional merit from their very spontaneity.

F. But you will surely admit that practical judg-

ments as to what is right and wrong differ very greatly at different times and places?

M. Willingly. The application of moral principles has varied, but the principles themselves are ever the same. Many unjust actions have not been thought wrong; but no one ever judged an action to be wrong because it was just. Ingratitude is common enough, and people will sometimes say that this or that action, which is an ungrateful one, is under certain circumstances a right action, but they will never say that any action is right because it is ungrateful. One of the most shocking acts conceivable—the murder of aged parents—may really be the result of true moral judgments under peculiar conditions. It is said to be done by some savages in obedience to the wish of their parents, to save them from suffering here and to secure them prolonged happiness hereafter. They draw correct inferences from true principles but are mistaken as to facts.

F. This instance reminds me that there is a word to be said about the origin of man. Do you accept the Darwinian doctrine on that subject?

M. To tell you the truth, I think it is a most absurd doctrine.

F. That is a strong thing to say, considering the number of eminent men who support it, and their full competence to judge in all matters of physical science.

M. That is just it. They are competent in physical science, but they are lamentably deficient in philosophy, and not a few grasp at it as a polemical weapon. It is held with passion and propagated with enthusiasm, for it has social and political con-

sequences, the initial stages of which are agreeable to its advocates.

F. But man's body is very like an ape's, and the process of his development is similar to that of all beasts. He is hairy at birth, and for a time before birth has a long tail; at a certain period he has the gill-arches of a fish, and he starts on his intellectual journey with the brain of a lamprey.

M. Quite true; and at a yet earlier period his germ is hardly to be distinguished from a microscopic fungus. But what of all that? The mind of man seems to differ not in degree but in kind from the psychical faculty of every other animal, and therefore I do not see how he could ever have been evolved from them. We have seen the essential differences between a moral judgment and any aggregate of feelings, and between an intellectual conception (such as 'truth,' 'number,' 'existence') and any other aggregate of feelings. It is congruous with the existence of these distinctions that all races of men can talk, but that no animal possesses the power of speech.

F. But they do express themselves very clearly by their cries and gestures. A dog, by its bark, will not only plainly indicate its feelings but its perception of a robber or a rabbit, and even, by its kind of bark, which of the two it is. There can be no *à priori* difficulty in supposing that some animal may have acquired the power of expressing itself by articulate sounds, for parrots can articulate. Once let this power have been acquired, and it then almost necessarily follows that it must have been enormously improved by a gregarious habit (and many monkeys

live in troops), those herds being preserved which, by the rapidity of their articulate utterances, became best able to avoid danger and procure food. As to the lower races of men, though all can speak, yet the language of some is of the poorest kind, almost confined to denoting physical relations, so that they are unable to express any lofty abstract ideas. Then as to ourselves even—how did we acquire speech? Not certainly by any Divine influx, but by imperceptible steps and a monkey-like tendency to imitation. At first we were dumb, and if we had had none but dumb associates our intellects would never have been developed. It may then fairly be maintained that language of an inarticulate kind is possessed by animals, and that these having acquired the power of articulate speech, such speech then gave birth to reason. From the development of the individual man, we may infer what was the process of development of the whole human race.

M. The facts we have already recognised as to the distinctness of the intellect from sense (especially in the department of ethics) are alone sufficient to refute all you have advanced. But your assertions may also be met one by one. How is language generated now? When in the cultivation of any science or art, newly observed facts give rise to new ideas, new terms are subsequently invented and adopted to give expression to such new conceptions. New words arise as a sequence, not as an antecedent to such intellectual action. It is of course true that infants learn to speak words the meanings of which they do not understand; but in the first place they learn them from those who do

understand them, and in the second place we do not know how soon they annex meanings of some kind to the words they learn, for they often plainly indicate that they have meanings, a knowledge of which they seek to convey, before they can speak. Recollect true language may exist which is not vocal. Our friend Henry Power was for a long time in a great fright about that clever eldest son of his because he was so long unable to speak, yet he showed plainly enough (by an elaborate gesture language) that his intellectual conceptions were quite distinct and clear. Deaf mutes, who have never learned to speak or to read the motions of other persons' lips, show us plainly enough that a society of dumb human beings would soon elaborate a highly complex gesture language. Their intellectual state would of course remain very inferior, but it would none the less be distinctly intellectual.

F. But you have said nothing as to my point about savages and infants.

M. My dear fellow, we know ourselves much better than we know either savages or infants. You would not surely then be so absurd as to endeavour to find out what you and I mean, by what we think may have been the meanings of savages or infants. Evidently it would be still more absurd to explain the meanings of savages and infants, by what we may suppose to be the admittedly still more unknown mental states of brutes. We must judge of the tree by its fruits; we must judge of latent capacity by its outcome. Savages and infants can be taught to understand our ideas and exchange ideas with us, but no brute can, for it cannot reflect on a single

abstract idea, or learn by any teaching to emit an intellectual judgment. Even our common sense enables us to recognise that they have not reason in the true sense of the word, though they have cognitions and emotions and can draw practical, though never formal inferences. If they possessed reason, its presence would very soon make itself inconveniently known to us. From the defect of outcome we can infer the absence of latent reason, just as by the presence of intellectual outcome in adult men, and can infer its latency in infants.

F. But what can you say as to the language of animals? Does it not serve sometimes to make known their cognitions no less than their feelings?

M. Animals, no doubt by their cries and gestures, often denote their cognitions, but they do not thereby intend to advert to such cognitions, nor do they intend to point out that things they cognise are facts, but they only give expression to the feelings which accompany such cognitions. They do not point out co-existences, sequences, or resemblances, nor do they make remarks one to another. But such remarks and declarations are constantly made by the lowest savages, and by infants even before they can speak. Therefore speech never could have generated reason. Now just as animals have a sensuous but not an intellectual language, so all the phenomena they exhibit can be explained by assigning to them that sensuous memory and sensuous knowledge, which we know we also have, without assigning them that fundamentally distinct intellectual knowledge which we also have, but of the possession of which no animal gives the faintest evidence. Animals, there-

fore, have their actions affected by sensuous perceptions of things as varying in number, activity, solidity, etc., and associate their present and past sensations, imaginations, and emotions in such a way as to draw practical inferences, but they have no conception of such things as 'number,' 'action,' 'solidity,' etc.; neither can they 'infer,' for they have no comprehension of what we mean by the word 'therefore.'

F. I think you take too high a view of the nature of savage man!

M. Indeed, I do not. Take about the lowest savages that exist—the Australians. Bishop Salvado, of Western Australia, has experimentally demonstrated that by careful and persevering treatment they can be made clearly to understand some of our highest abstract ideas. But the same savages, even while yet untaught, show their power of ethical judgment by their voluntary submission to a chastisement they have justly merited, and by their indignation when that chastisement has, as they judge, become unjust by having been pushed to a degree in excess of that which was their due. Nevertheless, just as brain disease or deformity may be a bar to all intellectual manifestations, so it is conceivable that very unfavourable conditions might render some families of men incapable of exhibiting their essentially intellectual nature. Still none such have been discovered as yet, and the world is pretty well known now. Another argument in favour of the non-dependence of thought on language, may be drawn from the lightning-like rapidity with which the mind may detect a fallacy in an argument —a rapidity far too great for words.

F. But this instantaneousness is not wonderful, because it is, after all, only the mental ejaculation of the word 'no.'

M. Pardon me, it is a great deal more than that, for the mental act of dissent is not a blind act, but is an act having its origin in a distinct reason. It is the consequence of an intellectual perception of a whole chain of argument, with its logical relations and consequences. In the mental act of negation there may be latent and implicit intellectual perceptions, which it might take several sentences to express, but which are perceived in that instant. Therefore, thought is essentially independent of language, and speech could never have begotten reason. As well might the concavities of a curved line be supposed to exist without its convexities, as verbal speech be supposed to have arisen before that mental speech (reason) which it represents and makes known. Again, speech requires an apprehending intelligence on the part of the hearer, as well as on the part of the speaker, if it is to be more than a monologue. We have, then, an *à priori* argument, drawn from the fundamental difference of kind which exists between our own higher and lower faculties—between sense and intellect, between feelings and conceptions. This argument is reinforced by an *à posteriori* one, drawn from the fact that we have no experience of the existence of true speech where intellect is absent, while we have abundant evidence of the presence of intellect in the absence of speech. This double argument absolutely demonstrates that speech must be posterior to thought, and could never have been evolved from faculties such as those of even the

highest brutes, and that therefore a wide gulf exists between the lowest human nature and the very highest brute nature.

F. How, then, could man have come into existence? If he is a being of so thoroughly different a kind from all other living creatures about us, there must have been some difference in the agency—or mode of action of the agent—by which he was produced, and how can this ever be imagined?

M. You forget, my dear fellow, the rule that we can never imagine what we have had no experience whatever of. Now, I have had no experience of such an origin. Manifestly, therefore, I cannot imagine it, and I decline altogether to attempt so impossible a task. But because I cannot imagine it, is that even the slightest approach to a reason why I should not believe it, if my reason tells me there is good evidence for believing it? My reason shows me that there is this profound difference in nature between man and the lower animals (a difference far greater than that which exists between the gorilla and the tree on which he climbs, or between the gorilla and the soil in which the roots of that tree are embedded), and I infer, therefore, that there was a difference as to the mode and agency of man's origin. But beyond this point my reason tells me nothing, and I refuse to budge an inch from the solid ground of reason. The Darwinian doctrine not only does not repose upon reason, but it is the absolute negation of reason. It reposes not on evidence but on ignorance —ignorance of what reason is, and, above all, ignorance of the meaning of the word 'goodness.' The comprehension of that word is absolutely fatal to

Darwinism. I regard the Darwinian belief as a 'superstition,' because it is a belief hastily formed from superficial inductions, and passionately maintained in the teeth of contradictory evidence.

F. You, yourself, seem to be not a little vehement in your opposition—too vehement, I think.

M. You will not think so, I am persuaded, when you have considered the matter well over and seen its consequences, and how closely the belief is connected with the agnostic or 'know-nothing' philosophy, without the help of which it could not maintain itself for a day, while it, in turn, lends help and plausibility to that philosophy—a philosophy which denies that we can know anything with absolute truth, asserting what it calls 'the relativity of human knowledge.' I regard that philosophy as one not only extremely pernicious, but as yet more extremely foolish.

F. But that philosophy is maintained by some of our best known writers and most prominent men of science. Is it possible that a system so supported and so widely followed can be really irrational?

M. If you saw a man seated high up on the branch of a tree busily engaged in sawing it across where it sprang from the tree's trunk, you would not think much of his wisdom, yet that is just the position of the advocates of the agnostic philosophy, who proclaim that all our knowledge has but a relative value, and that we cannot know that any of it is absolutely true.

F. How can that be?

M. Why, my dear fellow, every philosophy, every system of knowledge must start with the assumption, implied or expressed, that something is true. By the teachers of the doctrine of the 'relativity of

knowledge,' it is evidently taught that the doctrine of the 'relativity of knowledge' is true. But if we cannot know that anything corresponds with external reality, if nothing that we can assert has more than a relative and phenomenal value, then this character must also appertain to the doctrine of the 'relativity of knowledge.' Either, then, this system of philosophy is merely relative and phenomenal, and cannot be known to be true, or else it is absolutely true and can be known so to be. But it must be merely relative and phenomenal if everything known by man is such. Its value, then, can be only relative and phenomenal, therefore it cannot be known to correspond with external reality, and cannot be asserted to be true; and anybody who asserts that we can know it to be true, thereby asserts that it is false to say that our knowledge is only relative. In that case some of our knowledge must be absolute; but this upsets the foundation of the whole system. Any philosophy, then, of this kind refutes itself and is necessarily suicidal, like the sawing action of our friend up the tree.

F. Yet after all a certain scepticism, a certain opinion as to the relativity of knowledge may, I think, be held consistently and without intellectual suicide. For the greatest sceptic admits that we can know that of which we are conscious, and a state of doubt is a state of consciousness. He can, then, consistently affirm that he doubts the validity of knowledge derived from any other source. This is the only affirmation he makes, and in making it he does not affirm that such knowledge is invalid, for this indeed would be suicidal.

M. We have already settled that it is impossible to refute a man who says that he doubts whether he exists or whether anything is real which is beyond his own feelings. But pray observe that such a man, though he may consistently hold sceptical views, cannot consistently propound them as a system applicable to, and true for all other men. But this is just what our agnostics do. Yet in doing so they evidently become suicidal, and contradict themselves. If consistent they are reduced, by their system, to a condition of practical idiocy.

F. I think you are over hasty. By asserting the relativity of knowledge, agnostics only mean to say that knowledge is relative to our minds and to minds similar to our own—those of their fellow-men. It follows from this system that our thoughts, reasonings, and conclusions, have an objective value as far as the phenomenal world is concerned. But such agnostics profess they know nothing beyond appearances—nothing of any truths which are absolute, necessary, and universal.

M. By which profession they commit the very suicide, on their commission of which I have insisted and do insist. For the very essence of 'truth' or 'falsehood' is the correspondence or non-correspondence of 'thought' with 'objective reality'—as the common sense of each man affirms. Every agnostic, then, who speaks of 'truth' and 'falsehood,' and puts forward his system of 'relativity' as a 'true' system, commits intellectual suicide. The very words 'truth' and 'falsehood' are, on their principles, really meaningless.

F. May they not mean the correspondence of

what we know as 'thought,' with what we know as 'objective reality'?

M. But if agnosticism be true the agnostic cannot know that such correspondence exists. He may know his feeling of what he calls 'thought,' of what he calls 'objective reality,' and of what he calls 'their correspondence'; but he cannot know, and *à fortiori*, he cannot affirm, that his feeling of such 'correspondence' has any certain relation not only to the real things referred to, but even to his past feelings about them. The consistent agnostic can proclaim nothing. Herbert Spencer tells us that even 'difference,' as we know it, does not resemble the reality of difference, and he denies even the ultimate nature of the principle of contradiction. Yet if a thing may at the same time both be and not be, there is an end of all reasoning, and no proof is possible of the very system which would maintain so monstrous and self-destructive a paradox. Agnostics proclaim a system to be true which, in the name of reason, contradicts things which reason itself declares to be the most certain and the most fundamental. Every agnostic system is then necessarily absurd, but the evolutionary system of agnosticism has a special absurdity of its own.

F. Indeed! What may that be?

M. Why, that system asserts that all our beliefs, past and present, are the simple consequences of the action of our environment (the sum of the conditions in which we live) upon us. That environment, therefore, is the cause of our belief in the doctrine of evolution itself. But the environment has produced a multitude of beliefs which were mistaken, and have

been successively abandoned. Thus we have no possible guarantee—on this absurd system—that the doctrine of evolution itself may not be similarly upset and destroyed. Evolutionists ground all their arguments on assumptions which they must hold to be absolutely true and valid, independently of evolution, and yet, according to their own system, they deny that those assumptions have the validity which is necessary to sustain the edifice they would erect upon them. You wonder at my feeling strongly on these subjects, but I have good reason to feel strongly. Absurd as these systems are, they for a long time held my own mind in thrall. If, when my intellectual life began, I had had brought to my notice the considerations I have been putting before you, I should have been spared much waste of energy and much disadvantage. I therefore feel keenly the evil of such systems—systems insidiously undermining our rational confidence in human reason, and so weakening the springs of vigorous and healthy action. Such systems may well be termed 'the art of losing one's way methodically.'

F. Is there, then, no truth whatever in these assertions as to the relativity of knowledge?

M. There is a certain truth as regards the means by which we gain our knowledge, but not as regards that knowledge itself. Agnostics note the physical actions and sense impressions which minister to our intellectual activity, and seeing their very limited character erroneously extend that limitation to the intellectual perceptions themselves. It is an error analogous to that by which they ever seek to explain our higher faculties by our lower,

which is as if we were to explain the nature of adult animals by their embryonic conditions, instead of learning the true nature of undistinguishable embryos by the outcome of their several developments. The utility of embryology is manifest, but the nonsense which would result from making it an exclusive test is more plain still. I have no patience with the wilful folly of such perverse sophists.

F. You seem to be quite warm on this subject!

M. The indignation of any man who values human reason may well be excited by sophists who make use of exceptional mental gifts for the purpose of disparaging and virtually denying the existence of that wonderful and admirable human intellect which they insult and blaspheme.

F. I thought it was rather the Darwinian belief about man about which you were indignant.

M. And with good reason, seeing the consequences which will sooner or later inevitably flow from it, and which are as pernicious as irrational. Its effects may not show themselves unequivocally in this generation, because its feelings and habits of thought are fully under the influence of anterior beliefs; but nothing can more certainly tend to impoverish all that is most beautiful in human thought and life than a generally accepted belief that man is essentially a beast in origin and nature, his highest feelings of reverence and his deepest tenderness being nothing but a disguised dread of being eaten or a mere animal appetite.

F. We have got back in our discussion to the very point we started from—the true nature of human sentiments.

M. And we have also almost got to Kensington Gardens, so I will say good-night and turn back to bed. When shall we meet again?

F. I go to France to-morrow, but in a month's time we shall be together in Yorkshire, and I shall be there for two days before Emily and her mother come.

M. We shall then perhaps find time for one more leisurely talk, which will finish up all I have most pressing to say to you. Good-night.

F. I will send you a line soon. Good-bye.

Our too frequent mistakes and obvious intellectual imperfections are apt to render us distrustful of statements as to any 'necessary' and 'universal' truths. The reflection that our highest powers are dependent for their exercise upon mere sense impressions—such as the lower animals receive—and that neither poet nor philosopher can imagine aught the elements of which are not thence derived, tends to increase this distrust. But, on the other hand, the denial of our power of perceiving any absolute truth, implies the denial of the validity even of the declarations of conscience, and reduces those sentiments and aspirations which we most admire and revere—the tenderness of pure affection, the execration of tyranny, and the veneration of true worthiness—to the rank of brutal desires, which have been diverted from their ends. According to this view, the traditionary rules of truth, justice, and religion alike cease to have any claims on the sympathy or obedience of those who would emancipate themselves from the dreams of an uncritical age, and guide their

actions by reason. The consequences of this denial, however, do not stop here, but carry with them an inability to affirm any truth beyond that of our passing feelings, and thus, by a *reductio ad absurdum*, the validity of our perceptions of evident and absolute truth is established and vindicated. In recognising the fact that we do know some truths and that some of them are self-evident, we become explicitly aware that we are not furnished merely with subjective apprehensions needful for our existence, but also with a correct apprehension of many objective truths which are absolute and universal and, amongst them, of ethical truths. At the same time, we know that we have an animal nature and animal faculties, so that our single being has two sets of powers of two fundamentally different kinds. It is thus that we have not only cognitions, but also emotions and aspirations of a really high kind, which tend to elicit acts which the rational judgment may approve as good. The possession of these higher powers shows a fundamental difference of origin as well as of nature between ourselves and all other creatures whose existence is revealed to us by our senses. It is thus by fully recognising all the facts of our being, both our merely animal powers and our truly intellectual faculties, that the divergent teachings of eminent men, who direct their attention to only one or other portion of these facts, can be satisfactorily reconciled.

CHAPTER V.

CAUSES AND CONSEQUENCES.

A YORKSHIRE VALLEY.

Can we learn the purpose of human life and attain to such a knowledge of a First Cause as may reconcile the existence of Nature, as we see it, with the declarations of Conscience?

Maxwell. I am very glad you have kept your word and come here two days before your ladies, else I don't think I should have got you for this walk, or that we should have had any chance of another good chat together about philosophy.

Frankland. Perhaps not, and I should have been sorry to have missed the chance, for I have one or two things I want very much to say. I confess your system (so far as you have yet explained it to me) seems, at any rate, a natural one. It justifies that spontaneous trust in our own faculties with which we all start.

M. And if we do not trust those faculties and accept those certainties which nature gives us, depend upon it that (as Aristotle said) we shall never be able to obtain others which will serve us better. Yes! I confess that, in my eyes, one of the chief claims on my acceptance which the system I follow professes, is that very naturalness which

characterises it. How absurd it seems to me now, for a man to set out, as I once did, and wander away along all sorts of devious and distant paths in search of what he ends by finding just outside his own door, where it had been all the time without his ever noticing it.

F. But now that philosophers have set before us the puzzles they have, we have no choice but to explore those paths. If we were to sit down without exploring them, we could never feel satisfied that we had not missed some great truths.

M. So it is! It is a great pity, however, that so many men's attention should be almost exclusively directed to the study of the artificial constructions of Descartes, or Spinoza, or Berkeley, or Hume or Kant. Natural 'science' has gained public attention thoroughly, and it is greatly to be desired that the public should begin to attend to a natural 'philosophy.' What a delightful place this is, is it not? And how lucky we are to have so perfect a day for your first visit to it.

F. It is lucky also that Mr. Aislabie got ostracised, and so found leisure to plant all these trees which have grown so well. I confess I don't care for his temples of 'piety' and 'honour.' I much prefer his conifers—his plantations are glorious!

M. These odd eighteenth conceits must, I suppose, wait somewhat longer before they come to be appreciated again. Very likely they will sooner or later find admirers once more! Who, twenty years ago, would have anticipated a revival of Queen Anne's architecture? But you

will have a treat directly; at the very next bend of the road you will see the abbey.

F. It is very charming here; but what delicious spots these old monks generally fixed upon. I take it, they had at least as much appreciation for the good things of this life as for any of those of the life they thought was to come after it.

M. I think there is some evidence that they almost possessed our modern love for the picturesque in Nature. Still they always had good practical reasons also for any choice they made. They wanted wood and plenty of good water, and they got both in abundance in this valley with its river Skell. But see, there it is! there is Fountains! Santa Maria de Fontibus! What a glorious pile it is, and what a pity that no more of it has been preserved!

F. I don't know. The church really wants very little but its roof—so little that, perhaps, as our host has joined the Roman communion, he may choose to restore it?

M. He is pious enough to do it, but far too practical for anything so Quixotic. Artists and antiquarians have no cause to fear for their cherished ruin.

F. What was the purpose of this place with so many low pillars and arches?

M. It is believed to have been a sort of ambulacrum for the lay-brothers. On the opposite side was the Abbot's residence. Let us sit down a bit in the shade! It is singular how many of our most beautiful abbeys were, like this, Cistercian. The rule was a popular one, in spite of its austerity,

and it was no doubt strictly kept at the time this building was erected.

F. I dare say! But what folly and barbarism it all was. Yet the same delusions haunt us still. A great imaginary ghost! a Brocken spectre, consisting of our own shadow magnified as cast on the clouds of the imagination, and then ignorantly taken for a reality and served by the violation of the natural laws of our being, by self-degradation and self-inflicted pains! When will men finally awake from their theistic dream?

M. Never! for that dream is the most substantial of all realities.

F. Do you really and truly think so? I should like to hear the reasons you can advance for so thinking in the light of the science of this nineteenth century.

M. I do most truly think so, and I will willingly give you my reasons as far as I can. But in the first place, let me ask you whether we have not agreed to trust our faculties—to accept, without cavil, what is simply evident, and therefore needs no proof, and to hold that to be universally true which we see to be positively necessary?

F. Yes, we have so agreed. And what then?

M. Then one of these self-evident, necessary truths is that every change or new existence requires a cause, and that every double series of mutually correlated orderly sequences also requires a cause for the institution and evolution of the whole series. We saw this before, and we saw that there must be a cause either external, as in the

case of the Chesil bank, or the Review, or else internal, as in the case of the oak tree.

F. I remember the instances you refer to, and our conclusion about them.

M. Now consider the universe as one great whole, does it not require a cause for its being?

F. I can't see that it does. Why may it not be eternal? Why may not the whole myriad suns and systems have pulsated rhythmically, through an eternal past, to and fro from a state of nebula to a state such as that in which they now exist, or (as is, perhaps, more probable) why may they not so alternate, bit by bit, first one and then another system of worlds collapsing into nebula, to be again slowly rechurned into suns and planets? I see no reason why such a process should ever cease or ever not have been, or why life may not be ever reappearing and creeping, as it were, over the face of the cosmos as one cosmical body after another happens, here and there, to get into a state fit to give origin to and sustain it—a state in which it may continue for a passing moment of a few billion years.

M. I am inclined to side with you, though, as you know, some very distinguished physicists think that science does point to a beginning, and also to an end, to be brought about by the completely equable diffusion of energy in one universal dark and lifeless chill. Although I cannot pretend to dispute their arguments, I am by no means satisfied there are not flaws in them. I am inclined to suspect that no really indisputable scientific arguments can be brought against the past eternity of the universe. Let us, then, for argument's sake, consider it to be

certainly eternal, and let us consider it with the whole series of its orderly changes, including the vital phenomena we have about us, as one whole. I say that, thus considered, a cause—either external or internal—is required to account for the fact that that one whole is what it is, and for its entire series of changes being what they are. Such a cause of an eternal universe must, of course, be itself eternal, and to be traced backwards along the whole infinite series of past changes, and forwards over the infinite series of future changes, whether the universe pulsates from nebula to worlds as one whole, or sporadically, as you seem to prefer.

F. If I were to admit a cause at all, I should prefer to admit an internal cause, and so I should like to understand more fully, exactly what it is you mean by an internal cause, before we go further into the question as to whether it is necessary to believe in any cause at all.

M. I will try to make my meaning as clear as I can. You have admitted, in our former conversations, that by memory you know some of your own past actions. You, therefore, know that they were yours, and you also know your own continued identity. You must, therefore, also admit that your present simultaneous activities of different kinds are yours likewise; that it is you who both hear me speak and see my lips move, while you can feel with your hand the turf on which we are sitting, and the west wind blowing on your left cheek; that it is you also who follow my arguments now, and who feel emotions of interest and admiration at the sight of these ruins. Even when you

dream, this identity of your being continues; you never dream you are somebody else. You must admit, therefore, as you have before admitted, that there is in you a permanent something.

F. There is my body, of course, but any other permanent thing is unknown to me, and I see no reason to believe in its existence.

M. But your body is not permanent; it has even been altogether renewed since you can recollect—since actions you performed in childhood which you can remember as being 'yours.' The food you take becomes your body day after day, and day by day your body divests itself (in the inmost recesses of its substance) of particles which your excretory organs convey away. Yet you persist through all, and connect all your passing states into one substantial unity—yourself—of the continued existence of which your consciousness informs you.

F. But a fountain of complex jets continues to persist as an apparent unity, and yet it is no true unity at all.

M. A very good illustration in support of *my* position. Such a fountain is a persistent unity in a certain sense—namely, in so far as the water, pressure, form of the orifices whence the water jets, etc., all persist. But its unity is altogether extrinsic, and it has no internal powers of maintenance, growth, or self-regulation, and, of course, no feeling. If it had these it would be truly a unity, and then the very manifestness of the evanescence of its material particles would only make more plain the presence of a permanent internal cause of such maintenance, growth,

self-regulation, and feeling. Now your organisation is much like that of the fountain, for neither the parts of your body nor the states of your mind persist, but an underlying or pervading 'something,' which unifies both. I mean that it unifies, not only your states of mind as a continuing mind, and your states of body as a continuing body, but all your states, both bodily and mental, in one substantial unity.

F. Do you deny, then, the distinctness of body and mind?

M. If I hurt my leg, it is as much I that suffer, as it is I who think when I am thinking. I act as truly when I wash myself as when I reason about philosophy, nor do I doubt but that some bodily action accompanies and ministers to every highest act of reason as well as every act of digestion or breathing. This two-sided unity continues during life. After death we have, of course, inanimate matter only. But we feel and know that the dead body of our friend is not our friend. In a word, our consciousness tells us that during life there is in us a certain principle of individuation, which is wanting after death. This principle it is which makes our body (change as it may) our body, and makes our mind (change as it may) our mind, and causes our mind and body to be two sides of one single unity. This principle of individuation is 'the soul.'

F. The soul! That is an exploded notion. Our leading physiologists all deny and decry a belief in the soul, which they call 'animism,' as a system of belief now dead, and which, when alive, was but a survival of rude beliefs of savages in ghosts, which they supposed could temporarily leave

the body in dreams, and could quit it permanently for another mode of existence, at death.

M. This denial on the part of physiologists, it is very easy to understand. Every one to his business, in which his opinion is deserving of respect! Physiologists had very good reasons for opposing the notion that the living body of an animal, or of a man, had within it a numerically distinct, spiritual, substantial something—a 'soul,' which inhabited the brain, and thence ruled over the whole organism. That fanciful notion, so common since the time of Descartes, has been gradually expelled by science, which can find no evidence for the existence of such an entity distinct from the living, organic body itself. It is this figment which physiologists really decry when they sneer at the 'soul.' But if they understood what is meant by 'the soul' in the sense in which I use it (as, indeed, Aristotle used it), they could not deny its existence. The existence of the body may, indeed, as we have seen, be denied by Idealists, but the existence of the 'soul' it is absolutely impossible to deny, for the very act of denying it implicitly affirms it; since without the presence of some principle of individuation, the sensuous and intellectual activities could not be unified into a judgment—which itself is one form of their unification—and without an explicit judgment the existence of the soul cannot be denied.

Now this principle of individuation—this unity, which consciousness makes known to us in ourselves—common sense and careful reasoning unite to assure us exists also in animals. Fancy a tiger with its prey! Who can doubt that the plaintive cries

of its victim, the sight of its writhing limbs, and the taste of its blood, may be all simultaneously felt by the same beast? More than this: such sensations call up in it more or less distinct reminiscences of similar feelings previously experienced, and give rise to vivid emotions and to appropriate actions, so that past and present sensations, of very varied kinds, are united with various emotions and appropriate actions in one existing psychical activity. Such a tiger, then, must somehow be really the seat of a unifying power which unites and synthesises its various activities, and is a principle of individuation. This principle, or force, cannot be said to have any organ except the entire body as one whole, which it animates, and the activities of which reveal that invisible principle's existence, just as the contractions of a muscle reveal the existence in the flesh of an invisible power of contractility.

F. But we have a distinct and separate organ of individuation and unification in the nervous system. It is that which regulates, harmonises, and unifies all our actions, and it is that which really makes us one whole, and gives us that seeming simple unity we have.

M. Indeed! Does not, then, the nervous system's own action and adjustment to other bodily systems require regulation? Can it regulate itself? Besides, during a certain early stage of our existence —as during the whole lives of many inferior organisms—there is no nervous system at all. What unifies and regulates the actions of the body under these circumstances? What unifies and regulates those changes by which the nervous system is itself produced?

F. You forget that all except the very lowest organisms consist of distinct organic units, or 'cells,' and that these are grouped into secondary organic units called 'tissues' (muscular tissue, skin tissue, bone tissue, etc.), which again are aggregated and integrated into 'organs' (stomach, heart, etc.), which organs themselves unite to form 'systems,' such as our 'respiratory system,' 'nervous system,' 'circulating system,' etc. The unity you speak of is but the summation, the orderly conjunction, of this hierarchy of activities which, when they cease to be orderly, are what we call 'disease,' while their complete cessation is what we call 'death.'

M. I do not, in the least, forget all this, but you will admit that the cells which constitute each several 'tissue,' though they have a sort of life of their own, have each their individual life merged, as it were, in the life and activity of the tissue they form part of, and that—in the same way—the properties, or activities of the tissues are subsumed and synthesised into a higher unity, namely, the functions of the organ which they build up. The stomach digests food, and does it by means of the properties of its component tissues, but it is the stomach as a whole which carries on the entire function of digestion, part of which is due to muscular action, and part to solution. So, again, the functions of separate organs are subsumed and synthesised into the activity of a yet higher unity—that of the organic system to which they belong. Thus, for example, the retina at the back of the eye has its own activity, but it can only exercise it usefully in conjunction with the humours and structures in

front of the retina, nor can all these together, affect sight without the brain, nor can even this conjunction suffice, except when a due supply of vivifying blood circulates through the whole. The heart, again, is the main organ of circulation, but circulation is not a function of the heart, but of it and all the vessels likewise. Just so the functions of all the systems of organs are subsumed and synthesised into a higher unity, that of the life of the animal itself. This life is the function of the animal's body considered as one whole, just as the subordinate functions are those of the body's several sets of organs. It is not that there is a body and a 'vital principle,' which are really, numerically and substantially distinct, but that there is one substantial unity which may be regarded either dynamically—when we regard the soul or principle of individuation—or statically—when we regard the parts of the matter of the body. By the word 'soul,' then, I do not mean, nor did Aristotle mean, a separate entity inhabiting the body—an extra-organic force, numerically distinct from it, and acting by and through it—but an intra-organic force, making, with the matter of the body, one real, substantial, and individual whole. It denotes that which, as considered apart from the body, is but a mental abstraction, but which, considered as one with the body, exists most truly and really during life as an inseparable part of one indivisible whole—the living body. It and the body are one, as the impress on stamped wax and the wax itself are one, though we can ideally distinguish between the two. Our common sense assures us that a living animal is not a mere piece of complex

matter played on by physical forces from without, which transform themselves in passing through it. The living animal is the expression of a peculiar, immanent principle (whencesoever and howsoever arising), which, for a time, manifests its existence by the activities of the body with which it is so entirely one, that it may much more truly be said to be the animal, than the lump of matter, which we can see and handle, can be said to be such animal.

F. You say, then, 'the dog has a soul?'

M. Not at all! I say rather the dog *is* a soul. At least it is less incorrect to say that, than to say that the dog is 'its body,' or is 'a complex piece of matter.' It is the invisible, immaterial entity which ever escapes our senses, but which is visible to our reason, which is more truly and emphatically 'the dog itself,' than is the matter of which it is composed. The energy, direction, and control belong to it, and without it the dog is not. The dog's dead body we may anatomise, but the dog itself with death has ceased to be. The expression 'a dead dog,' though permissible popularly, is as essentially contradictory an expression as would be the expression 'a dead living creature.'

F. I cannot imagine this entity you speak of. It seems, according to you, to be distinct and yet not distinct, to be only ideal and yet to be real.

M. I am afraid I have not been clear. I mean that this immanent principle is distinct in nature from the matter of the living body, but is not distinct from the living body itself; that it is ideal, as distinguished from the living body, but real, as being the living body in its activity. It is of course essentially unimaginable,

since it is imperceptible to the senses, though its existence and nature reveal themselves to the intellect. It necessarily escapes our senses, because these senses can detect nothing in an animal beyond the sensible qualities of its material parts. But neither is the function of an organ to be detected except by the action of the organ, and yet we do not deny the existence of the organ's function, or consider it to be a mere blending and mixture of the properties of the tissues which compose that organ. We have already seen and agreed that thought, not imagination, must be and shall be our criterion, and that much can be conceived which can never be imagined, but only symbolically expressed by words or other external signs. Such symbols, therefore, are necessarily open to cavils, as are the symbols 'substance,' 'cause,' 'being,' etc., which are symbols intended to make known what is beyond sense, but which several words are nevertheless necessarily themselves transcripts of sense, and therefore fundamentally inadequate to fully express what they intend to denote. Nevertheless, such symbolical expressions practically serve to make their meaning known to other minds, though it is open to any person to profess that he does not understand them, and to ask for sense impressions absolutely equivalent to the ideas intended to be conveyed by them, though by the very nature of such symbols no such equivalents can exist; for every sensible image or symbol must be derived from sense impressions, and when employed to make known what is beyond sense, must be inadequate to represent it otherwise than symbolically.

F. Such symbols as the expressions 'cause,' 'substance,' 'being,' etc. do certainly convey a knowledge of what they symbolise to my mind, and therefore I suppose to be consistent I must accept this 'principle of individuation.'

M. Not to accept it is to be driven to the absurdity of conceiving the living body not as a unity but as made up of an indefinite quantity of minute independent organisms, each with its own principle of individuation—its own soul—as Haeckel has expressly done. This conception but multiplies difficulties, since the same arguments can be brought against the existence of each of these souls as against the one soul; while to affirm their existence and to deny functional unity—to deny that the living dog and our very self are each respectively one thing—is to contradict the direct evidence of our senses as regards other organisms, and of our consciousness itself as regards our own.

F. But even if we grant the existence of a principle of individuation in men and animals, we surely need not grant its existence in plants, such as the oak you spoke of with reference to 'an internal cause.' If you grant that, you will have to admit that every potato-plant, nay, every fungus, has, or rather as you say is, a soul!

M. And why not? In every plant there are innate harmonious powers of growth, sustentation, and reproduction, while in some (Venus's fly-trap, the sun-dew, and many more) we meet with a susceptibility to impressions followed by appropriate actions which singularly simulate the actions of animals. If we grant a principle of individuation to

animals, we cannot refuse one to such plants; if not to such plants, then not to others generally like them, and so on. Biology shows us that plants and animals cannot be separated by any hard and fast line which physical science can point out. There is no hiatus from the orang-outang to an alga or a fungus. The hiatus which does exist is that between the living and the not-living; and however much we may be persuaded that that hiatus must have been bridged over at some period of evolution, all experiments and observations go to show the absolute distinctness between the living and the non-living now.

F. All this talk about the soul is a digression from your argument as to a First Cause—either external or internal—of an eternal universe, ideally gathered up and considered in the lump as one whole. If I must admit one or other, I should say that an internal cause is the more rational and probable hypothesis.

M. Then I confess I differ from you. Rocks do not generate rocks, nor do physical forces, however correlated, regulate each other. The stars and planets attract each other according to the laws which we know regulate inanimate bodies on the earth. To me it is plain that the universe is not a living creature, nor does physical science regard it as such. Its actions—apart from those of its living inhabitants—are far more comparable with those of a machine or the orderly collocation and arrangement of stones in the Chesil bank, than they are comparable with animal or vegetable growths, to say nothing of reproduction. To my mind, the universe regarded as

one whole, demands not an internal but an external cause, and one, of course, as extensive and enduring as itself.

F. But I think you omit to note the activities and constant forces of every particle of that which you are pleased to call mere inorganic matter. The various powers and activities of its parts are such that for every change from its state, as a whole, at one instant, to its state, as a whole, at the succeeding instant, its condition at the former instant—together with its own inherent powers and forces—is sufficient to account. If, then, the sum of its conditions and powers at one instant are sufficient to account for its condition at the succeeding instant, we have but to carry this causal relation backwards and forwards, in imagination, to see that for a whole eternity no other causes are needed than the forces and circumstances of each preceding instant.

M. Granted! In affirming so much, however, you do not even touch my position. I say that the whole universe, with the sum of its existences, powers, and activities, considered in one lump, requires an external cause in order that its constitution should be of the particular kind that it is, in order that it may be capable, supposing it is capable, of this eternal series of harmonious, orderly changes—for that they are such we see now—or at least of that vastly prolonged series of harmonious, orderly changes which we really know does take place.

F. Grant but the existence of a persistent and universal force, and your external cause ceases to be needed. All and every law and fact follow as necessary consequences from the persistence of force and the primary qualities of matter; as is evident.

M. How so?

F. Why, otherwise 'force' could not be permanent, nor 'matter' constant. For example, if action and reaction were not invariable, equal and opposite, force would not be invariably persistent, seeing that in no case can the formula fail unless some one or other of the forces concerned should disappear. As with this simple law, so with the most complex; any failure in the sequence of similar consequences on the occurrence of similar antecedents would show that force or matter had disappeared.

M. How do you conceive the genesis of the world we see to have taken place?

F. Interpreting the mazy nexus of phenomena only by the facts which science has revealed, it seems to me that from the time when the process of evolution first began—before there were any signs of condensation in the primitive nebula—every subsequent change was necessarily bound to ensue; else force and matter have not been persistent.

M. How do you conceive that the vast variety of natural laws we know began, and how is it they continue to be?

F. In this way. When the first womb of things was pregnant with all the future, there existed probably but one of the formulæ we call 'natural laws'—namely, the law of gravitation. Here we may take our stand. It does not signify whether there ever was a time when gravitation was not (*i.e.* when matter, as we know it, did not exist); for if there ever was such a time, there is no reason to doubt but every reason to conclude that the evolution of matter, as we know it, was accomplished in accordance

with law. Similarly, it is overwhelmingly probable, from analogy, that if our knowledge of molecular physics were sufficiently great, the existence of gravitation would be found to follow as a necessary deduction from the primary qualities of matter and force. Starting, then, with matter, force, and gravitation, what must happen? Diffused nebular matter must begin to concentrate, and, being opposed by atomic repulsions, must evolve heat—*i.e.* a new form of matter and force. Then radiation and further approximation and new combinations will ever result in new effects; and with heat and pressure, chemical combinations will suddenly arise, and so on and on. Thus new natural laws will be self-generated till we get to the present marvellous complexity with life and mind, and thus science—by establishing the doctrine of the persistence of force and the indestructibility of matter—has effectually disproved the hypothesis that the presence of law and order in nature implies an intelligent law-giver.

Ever present force supplies the ever present absolute cause of which you have spoken. There is nothing in the nature of things themselves, as far as we can see, antagonistic to the supposition of their having been self-evolved, and a mere subjective incapacity to imagine fully the how of this is no argument against it.

M. Can you point to any natural indications of the physical causation which has produced the cosmic harmony we see?

F. Yes. The universal tendency of motion to become rythmical—itself a necessary consequence of the persistence of force—is a sort of conservative

action. Moreover, as every newly evolved law came into existence it must have been, as it were, grafted on to the stock of all pre-existing laws, and so would not enter the cosmic system as an element of confusion, but rather as an element of further progress. Natural laws then arising by way of necessary consequence from the persistence of a single self-existing substance, it becomes a matter of scientific demonstration that the fair and orderly universe which now exists is the one and only universe that, in the nature of things, can exist. The persistence of force and the principle of natural selection, together explain everything. The various solar systems which rotate in stability are the rare chance survivors of the many worlds which happened to be cast off in less propitious orbits and surroundings. As the general laws of the universe may separately be shown to be the necessary outcome of the primary data of science, it follows that the whole collection of similar laws must be for a certainty similarly explicable. Your assumption, then, of an absolute cause for the universe is a wholly gratuitous one. We cannot of course prove a negative, and if you choose to imagine a demon, a dragon, or an angel, I cannot disprove its existence. But reasonable men will in all cases be guided as to their beliefs by such positive evidence as they can get; and if, as in the present case, the alternative belief is wholly gratuitous, they will not accept it, and they will reject it if it appears to be opposed to the great body of evidence which the sum-total of science supplies.

M. You have spoken as if you asserted that the universe had a beginning. Now if it had a beginning

it must have had a cause, and an orderly cause, since an unlimited number of atoms in an unlimited space might be grouped in unlimited modes, while only one mode could produce the existing order.

F. You have misunderstood me. I believe in an eternal universe.

M. Then why speak as you have done of the 'primary qualities of matter,' and the 'first womb of things,' the 'evolution of matter as we know it,' the 'self-generation of natural law,' etc. ? If the universe is eternal, it must have been, as a whole, eternally as it is now. Its parts may change, systems may pulsate in and out of distinct existence, but the whole mass, with its laws and capacities, must ever have been as we know it at present. It could never have begun to differentiate itself and, as it were, to create. Therefore, it must have been eternally multifold. Above all, the universe as a whole could never have been submitted to any competitive action; and therefore natural selection could never have given rise to its perfections, or in any way explain them. We do not infer the necessity of an absolute cause from any mere mental impotence, but as a positive perception. How did your rythmical motion come? 'Natural selection' could never have initiated gravitation, motion, chemical affinity, crystallisation, life, nutrition, sensation, thought! One force could do absolutely nothing by itself unless it could create. There must be a collocation of forces, or rather of things with active powers. And why should there have been a collocation with such harmonious results as we see around us? I nevertheless admit that we may conceive an

eternal universe, and that there is nothing I know of in reason against it. I admit also that we may conceive a single body, or more, to have existed uncaused, and that such a thing does not demand any absolute cause—such as that for the existence of which I have argued—in order that we may conceive its being.

F. Bravo! You must admit, then, that a thing may have existed from all eternity with certain qualities and powers; for is it not inconceivable and against all experience, that anything should even for a moment exist without qualities and powers? Let us then suppose the existence of a globe of gold for all eternity with the qualities and powers of that metal. Then let us imagine many such united together by a power of cohesion exerted by them for all eternity. Let us then add, in imagination, substance after substance with other qualities and relations, all from eternity. May we not thus go on adding powers, actions, and reactions indefinitely, thus adding to the complexity, and making the whole harder and harder to imagine, but not really any more inconceivable than before?

M. All this I admit, but it does not in the least even touch my argument. Consider what is the actual fact as to the correlation of bodies, their powers and actions as we see them now in our universe! Consider its order, beauty, and harmony—the perfect correlation between its general laws! This ubiquitous correlation and this harmony require a cause, such as your hypothesis of persistent force cannot supply. Unless we postulate some one integrating cause, the greater the number of laws in nature, the less likelihood is there of such laws being so correlated as to produce harmony by their combined action. Take

the world as we see it, and let us admit—which I am very far from really admitting—that the principle of 'natural selection' will account for the beauty of flowers and birds, the charming harmonies of colour, all our sweetest perfumes, and the tuneful notes of our fields and groves. Yet such selection will never account for the development of musical harmony by man, nor, as we have seen, for human intelligence, especially for our perceptions of the beautiful and true, and above all, for our perception of the good. But let us grant, for argument's sake, the absurd proposition that it could account for them all, as they exist in this planet, that would in no way account for their existence in an eternal universe.

F. It seems to me that it would!

M. No! for though in such a universe, now this and now that world, might have been evolved from nebula; yet, in order that this should occur, these various powers must have eternally existed now in this portion of the whole and now in that, since, as I said before, an eternal universe must—as a whole—have been eternally what it is now. Therefore, these forces could never have been evolved by natural selection, since an eternal universe could never have been naturally selected, *i.e.* submitted to competition. Therefore, for the existence of this mutual correlation, and above all for this intelligence we see now existing, an absolute cause must ever have co-existed with the universe.

F. You would not gain much if I were to grant what you ask, since I might, after doing so, proceed to ask you to assign a cause for your absolute cause.

M. You would make an unreasonable demand;

for the absolute cause and the universe it causes are as different as possible. The universe is a very complex mixture of different substances, and cannot be conceived as containing within itself the sufficient reason for its own existence, but it is quite otherwise as regards the absolute cause, which can perfectly well be so conceived. Moreover, there can be no incongruity in supposing a perfectly simple substance existing eternally uncaused along with the complex universe which it unceasingly causes.

F. If we must admit the existence of such an absolute uncaused cause, the wonderfully ceaseless activity of every particle of matter seems to me to point to an internal cause. Even Christians admit, as a cause, a God 'in whom we live, and move, and have our being!'

M. 'In' whom, yes! But such a cause must be external. Christians recognise a cause as 'pervading' the universe, but such a cause must be external to it as thus 'pervading' it. This 'pervading' character must be, I suspect, the essence of your conception of the First Cause as one that is internal. If you mean that the fact of its so pervading makes it one substantial unity with the world's matter, then my reason contradicts such an assertion; as I am confident that the universe is neither an animal nor a plant. If, however, you only mean by the term 'internal' that this force pervades the universe and is in this sense internal, then I fully agree with what you say.

F. I mean the latter, and so I suppose I must really mean an external cause.

M. Then that eternal, external First Cause, must

be of a nature adequate to produce all the effects which we know take place in this world of ours.

F. Adequate! When you say that a cause is 'adequate,' do you really mean anything more than that it can produce that which, in fact, it does produce? Who would know, *à priori*, the adequacy of a bit of steel to produce a wound, or of a flame to produce a burn?

M. The 'adequacy' is not in the steel or in the flame, but in these as affecting a sensitive organism which they may injure. It is clear to my mind that there is such a thing as adequacy—not, of course, that we can always know *à priori* what the effects of any change will be; but we can sooner or later know *à posteriori* not only that certain effects have followed from certain causes, but how it is these causes have been able to produce such effects; and the number of instances in which we can see this enables us to judge that, had we sufficient means of knowledge, we might know how they do it in all cases, *i.e.* we should apprehend their adequacy. But, apart from this, we may take experience as our guide, and we certainly have no experience of life being produced by the lifeless, or of sensibility and intellect appearing without their pre-existence in the agents which caused their appearance. No scientific treatise has ever been produced by the uncultured, only a strong man can lift a heavy weight, and no mere donkey-engine can drag a long and heavy train. In short, '*nemo dat quod non habet*!'

F. So far I am with you.

M. Now, amongst the effects of the first cause which we see around us are two the notable distinct-

ness of which from all other things I have tried, I hope successfully, to make you see. These are (1) Intellect, considered generally; and (2) the Intellect, as perceptive of moral worth. Could these have been produced by a first or absolute cause which had neither? Recollect their utter distinctness of kind from all forms of sensibility.

F. Could matter have been produced from mind any more than mind from matter? I do not see how it could! An eternal substance, with the attributes 'thought' and 'extension,' seems to me to be the 'ultimate existence' absolutely required and postulated by reason. By it we may reconcile idealism with materialism. If you like the expression better, I will call this ultimate, 'an unknowable, persisting something underlying what we call matter and force, and which is the cause of both.'

M. In one sense the First Cause may be truly said to have the two attributes 'thought' and 'extension.' If you mean that the absolute first cause has, and must have, in the highest degree every positive perfection of every extended thing, as well as of every intelligent being, so that even stocks and stones may be said in their degree to participate in the resemblance of the universe to its Cause, which, in their various ranks, all the parts of that universe imitate; then you will only be saying what has been said time out of mind by all theologians. If, however, you mean to deny the real distinctness of kind between lifeless things and thinking beings, then you contradict our constant experience, and reject what we know most intimately. We know that we have on all sides of us a multitude of things—the air, the clouds, the water, and the soil—which do not in any sense think, while our

own consciousness reveals to us in our own being, an immaterial activity we know as thought. We know, then, by experience, two modes of existence—the material and the immaterial; and to deny their distinctness is to deny what is most evident to us, while to deny it and at the same time to affirm that the only thing which really exists is something which is neither of these, but which underlies both, is at the same time to contradict what is most manifest in favour of that which has nothing to support it but a vague fancy—it is, in fact, to play with words.

F. How, then, do you regard the nature of your absolute cause?

M. As a most certainly knowable but yet inscrutable entity, which, as essentially active, may be symbolised by force rather than by matter, and best of all by that form of activity which we know as intelligent volition; and perfectly intelligent volition must be good. As to your question whether mind could have produced matter, any more than matter could have produced mind, the very fact of the essential activity of the First Cause seems to me to answer it. Such a Cause must much more nearly resemble, however much it transcends, what we know as intelligent force, than anything we know as matter. Surely your common sense will allow that intelligence, infinitely transcending all you can imagine, may far more easily be conceived as the cause of the material universe with its physical and vital forces, than that intellect, moral perception, and will, should have been produced by a mere play of physical forces upon matter.

F. I own that the latter supposition does appear incongruous. But you speak of the First Cause being good as well as intelligent. Now, both 'goodness'

and 'intelligence' are human qualities; but to think of the Eternal Cause in human terms is to be guilty of gross anthropomorphism. This is the Brocken spectre I spoke of. It is the same all the world over. Man always worships an imagined reflection of himself. Voltaire was right when he said, '*Si Dieu a fait l'homme dans son image, l'homme lui a joliment rendu.*'

M. Tell me, now: granting the existence of a First Cause—a Cause of intelligence and moral perception, as well as of all else—does it appear to you that such Cause must be something more than some movement of material particles or some gas?

F. It does.

M. Do you object to speaking of this Cause as a 'personality'?

F. What do you mean by 'personality'?

M. I mean thereby to assert the existence of something possessing intelligence and will.[1]

F. Then, of course, I do object to it as anthropomorphism.

M. Do you object to such anthropomorphism in speaking of the eternal First Cause because the term 'personality' is below the mark or above it?

F. I object to it as being shockingly, inexpressibly below the mark.

M. Capital! Then we are quite at one. I will cheerfully own that it is as much below the mark as ever you like. If you can think of the Eternal Cause in higher terms than in human terms, pray do

[1] It hardly needs stating that abstraction is here made of all questions concerning the Christian religion and the doctrine of the Incarnation.

so, but I am certain you cannot. If you refuse to think of the First Cause in human terms, you have but the animal, vegetable and inorganic worlds from which to take your choice. You must then think of it in lower terms than those to which you object. Zoomorphism is much more absurd than Anthropomorphism after all. Surely the rational method is to employ the highest conceptions you can, while freely acknowledging their utter inadequacy. After exhausting ingenuity in arriving at the loftiest possible conceptions, we must regard them as being but accommodations to human infirmity. We may own that they are in a sense objectively false—because of their inadequacy—though subjectively and very practically true. We must of course be careful to remove from our conception all the imperfections we can remove from it, and to regard as infinitely greater and higher, whatever is positive in our conceptions. I am really sick of the nonsense that is talked about anthropomorphism. There is good Mr. Fiske—with his 'Cosmic Theism,' whatever that may be—who tells us that theism has been purified by a continual process of what he calls 'deanthropomorphisation.' He forgets that even he has not carried that process out completely, and that there remains even for him one human character yet to be eliminated from his conception of God, namely, that of 'existence.' That done, we have the non-existing as the absolutely adorable! *Das sein ist das nichts!* The funny thing, too, is that these eternal declaimers against anthropomorphism forget two things. One is that even the old inhabitants of this Abbey were quite familiar with their notion and denied that even

existence could be predicated univocally of God and creatures. The other thing they forget is that physical science is full of anthropomorphism, and that every attempt to expel it is necessarily vain. We must always remain men, and have human conceptions of all things we conceive; and it is as easy in religion as in science to recognise this, and guard against any delusions thence resulting. What is necessary is to take the precautions I have just mentioned.

F. To do as you suggest is, of course, to affirm the existence of God. Yet do not some singular results follow from so doing? If we are to regard the Absolute Cause as being himself intelligent and moral, because he is the cause of these qualities in us, we must also regard him as a laughing God, because he is the cause of laughter in men!

M. And why not? In a certain sense he is, though in another sense he is not a God of laughter. For what is laughter? It consists of three things united: (1) a bodily agitation; (2) a sensuous feeling; (3) an intellectual perception. True laughter (not an hysterical affection, or a mere bodily contortion due to tickling or some such cause) follows as a consequence upon certain ideas, and a perception of certain relations between ideas or the things they represent. It is the intellectual perception, then, which is the essence of laughter. There is no incongruity in this perception being far more perfectly in God's intellect than in any human mind, and the absence of this incongruity is at least evident in the mind of him who wrote, 'He that sitteth in the heavens shall laugh, the Lord shall hold them in derision.' Thus altogether there is no reason to

dread anthropomorphism as you seem to dread it. By making the best use we can make of such faculties as we possess, we may obtain a rational conception not only of the Eternal Cause, but also of the reason and meaning of human life.

F. What, then, do you infer the meaning of human life to be?

M. An Eternal Cause, the principle of reason and goodness as we know them, must have had a good aim and purpose in causing the existence of man. There must be then an end or purpose in human life, and a reasonable and good end.

F. Is not 'happiness,' as the poet says, 'our being and our aim'?

M. It is and it is not. To answer this question without explanation would be to mislead. Every sentient creature seeks spontaneously what is in some sense or another a 'good;' and man at his worst seeks even in his worst acts something 'good' in itself (abstractedly considered), however 'bad' his choice may be owing to his neglect, for it, of some far higher good. But the rational end of life is that which should be its end, *i.e.* that which ought to be its end, and the term 'ought' (as we have seen) is meaningless without the conception of 'duty.' Now the very conception of duty is of that which is necessarily supreme—of that which commands and is enjoined on us absolutely and without appeal. Therefore there must be actions to do which under given circumstances is absolutely right, and to neglect which is absolutely wrong, from the very nature of things; so that, if there were no rewards or punishments, the right would still be worthy, and the

wrong unworthy of our rational nature's esteem and pursuit.

F. You have Cicero on your side, who says of the right (*honestum*):—*Quod tale est ut detracta omni utilitate sive ullis præmiis fructibusque perseipsum possit jure laudari.*

M. Quite so! Nevertheless, with a First Cause of absolute goodness, we might expect to find that which is right so intimately associated with that which gives happiness, that the two are practically inseparable ultimately, while they are so temporarily disassociated as to give free scope for the exercise of moral action by affording us numberless opportunities of doing that which is right, because we see it is such, without our adverting to the question of happiness. But I recollect that when we last talked together you were inclined to think 'goodness' consisted in fidelity to an end, and I now ask you to observe how well this accords with the view that human life as the production of a good and intelligent Cause must have a good and rational end. Even on your 'natural selection' view of conduct (that 'morality' is the outcome of past pressures of utility), morality must have been embedded deeply in the very nature of things in order to have had the outcome it has had. If we accept your view we must admit that 'natural selection' has been so ordered as to bring about the assurance that 'natural selection' itself is inadequate as an agency without the existence of a profound, teleological Cause underlying it. We may therefore fully accept Herbert Spencer's views as to the means by which materially moral habits and feelings have been evolved, and have thus prepared

the way for the existence of formal morality. His error is to mistake the mere instrument of evolution for the cause, as a cockroach might regard only the broom, and be blind to the mistress of the house who had ordered the housemaid to sweep it away. Thoroughly analysed, Herbert Spencer's view is eminently satisfactory for two reasons. One is (1) his teaching that conduct should be conformed to an end; the other is (2) that we are to act with confidence upon moral sentiments which have become innate in us, trusting to the good effects of evolution. But such teaching implies the existence of a deep purpose in nature, and this purpose must harmonise with that inextinguishable desire for beatitude which is also innate in man. A good First Cause must then have given to man as the end of his being, a perfect beatitude coincidently with a perfect moral development.

F. I would freely concede what you urge but that it seems to me that every event is necessarily determined and fixed by its antecedents in an endless chain of physical causation. If so, freewill must be impossible, and not only that but all causation other than physical must also be impossible.

M. Do you, then, with Professor Huxley deny that either thought or feeling can act as causes, and affirm that both these are mere accompaniments of a chain of purely physical causation—whether in man or animals?

F. He seems to me to be right.

M. Let us look at a dog's actions. Its body is no doubt so far like a machine that it does act mechanically and necessarily, because its actions are

necessarily determined by the arrangements and adjustments of its various parts and organs. Yet its actions do not take place without sensations, and these sensations are not the mere accompaniments of bodily actions, but are themselves guides and directing agencies which intervene in and operate upon, though they do not break through, the circle of its bodily actions. The feeling of the blow of a stick or the sight of a threatened blow will change the course of action which a dog would otherwise have pursued. That it is the feeling or else the sight of the stick —together with past feelings and imaginations revived by the blow or the sight—which really causes the change, will be disputed by no one who has not some eccentric thesis to maintain. But the movements of the animal are also determined, like our own, by a multitude of organic influences which are not felt (though they operate through the nervous system), but which nevertheless form parts of a chain of immaterial changes[1] which accompanies the chain

[1] All physiologists allow that the nervous system ministers to a vast number of actions which are unfelt, as well as to felt actions, while other actions, which thenervous system cannot control, form part of an animal's vital changes. Such are the actions within the nervous system itself, and the changes which take place in the ultimate substance of the tissues of the body, beyond the reach of the most delicate nerves. Some of all these actions, we know by our own experience, are felt actions—the subjective and immaterial phenomenon taking place simultaneously with the physical (bodily) changes. It is undeniable that other nerve actions, which are not felt, may have their immaterial and quasi-subjective sides also. The actions of some plants come very close to those of animals, and the vegetable actions of all plants (nutrition, growth, and reproduction) are essentially similar to those of animals. We may therefore conclude that the activities which take place in the life of a plant are analogous to the unfelt actions of animals, and to those which take place independently of any concurrence on the

of physical modifications enduring throughout life. Every animal, in fact, is a creature having activities partly physical and material, partly psychical and immaterial; and it is these last (whether felt or unfelt) which control and direct the actions of the body, though they in their turn are influenced by physical modifications. We may compare this reciprocal influence to alterations caused by heat in the shape of a ring formed of two inseparably united metals which contract unequally at the same temperatures—alteration in either constituent affecting the compound whole, and therefore affecting the other constituent, which also forms part of that whole.

F. I recollect that Professor Bain has said: 'It would be incompatible with everything we know of cerebral action to suppose that the physical chain ends abruptly in a physical void, occupied by something immaterial which works alone, and so affects the other edge of the physical break—two shores of the material bounding the immaterial.'

M. And just as unreasonable would it be to imagine a break in the immaterial chain bridged over by the intervention of something material. What Bain affirms with respect to the brain and its activity must, by any logical psychologist, be also affirmed with respect to every entire living organism

part of the nervous system. We thus find in every organism a chain of physical phenomena, accompanied by a chain of immaterial energies, some parts of which latter we know in ourselves as conscious feeling and thought, but the rest of which in ourselves (and still more in other living creatures) we can know only by inference. The chain of physical phenomena consists of actions of that side of the one living whole, which we call its visible body. The chain of immaterial agencies consists of the actions of that side of the one living whole, which is its principle of individuation, its *psyche* or *soul*.

and its activity. Thus we get the two chains of modifications I spoke of, either of which may act as a cause to the combined whole.

F. How does our experience accord with all this?

M. Excellently well! Nothing can more disaccord with our experience than the assertion that our thoughts and desires never do or can intervene as causes in the events of our lives. What is the fact? Suppose a servant came down from the house, and told you that Emily and her mother had arrived. Are you not certain, do you not absolutely know that the actions you would thereupon perform would be due to your understanding what had been said? If I do not know that it is my knowledge of your sitting here with me which makes me keep on talking, I know nothing. To deny such a thing would be to deny what is most evident in favour of what is not at all so—some speculative hypothesis. In fact, this most absurd denial as the logical consequence of a certain theory is the *reductio ad absurdum* of that theory. The truth that we every now and then act in a new way because we have acquired some knowledge, is one of those primary truths which are self-evident. Moreover, we may ask the advocate of 'natural selection' how knowledge ever came to be at all, if it is in no way useful to its possessor, if it is utterly without effect, and a mere superfluous accompaniment of physical changes which would go on just as well without it?

F. The upshot is that you see no difficulty in knowledge being a cause, and therefore no difficulty in the action of our will. You have not, however, as yet touched my difficulties as to free will. You

have, I own, shown that the soul may act as a cause, but not that it may act freely.

M. I am glad you speak of the soul acting, instead of speaking of the 'will' acting. Much difficulty is occasioned by speaking of the will as if it were something distinct from the self—as if one could not act directly oneself, but that one had a sort of machine, the will, by means of which one acted. Now, I am conscious not of having a will in this sense, but simply of doing what I will. When we speak of faculties of the soul it is but a convenient mode of expression to denote different classes of its acts. There are no such things as these faculties distinct from, or forming parts of, the soul The memory is nothing more or less than the soul itself in the act of remembering, the understanding is the soul itself in the act of comprehending, and the will is the soul in the act of willing. Now, what is this freedom the existence of which you contest?

F. My freedom to do anything, however small, in opposition to my strongest desire or motive.

M. I fully grant that you may sometimes be unable so to act, for you may be suddenly paralysed. What I affirm is that you have a power of determining to act, a power of freely forming the internal act of determination to do something. It is only for this sort of determination that I claim freedom; not for the subsequent act, nor for the feelings and desires which may precede or accompany the act. My own consciousness bears witness to my having this freedom of determination

F. Pardon me, but you must surely misinterpret it. It is simply impossible that you can be conscious

of this freedom. Mill denies altogether that we are 'conscious of being able to act in opposition to the strongest desire or aversion.'

M. And quite right, too, if he meant to deny, as he probably or possibly did, that we are conscious of freedom; for freedom may mean nothing more than the absence of necessity, and we cannot be conscious of nothing or mere absence. In this sense he is quite right, but in another sense he is wrong.

F. Would you maintain, as some do, that we are conscious of a power to determine or not to determine, according as we please?

M. I will not even maintain that; for some persons might reply that there is no such thing as dormant or inactive power, but that activity is its very essence, so that it ceases to exist as soon as it ceases to act. I do not affirm this myself, but I wish to steer clear of the objection.

F. Will you maintain, as so many do, that when two courses of action are proposed to you, you are conscious of being able to choose which you will?

M. No, I will not; for it is obvious that I can only be conscious of what actually exists, and not of that which is as yet in the future, or what 'might' be.

F. What, then, do you maintain?

M. I maintain, in the first place, that these objections are of no avail against the facts of consciousness, but merely against that analysis of it which has been made by some of those who appeal to it. And I also maintain that consciousness, properly analysed, does declare in favour of our freedom.

F. How can it do so?

M. You will admit that our consciousness can

inform us what is meant by being dragged along (if we are dragged along) or otherwise compelled to go in any direction; and therefore consciousness is equally able to inform us that we are not being dragged along or otherwise compelled. Now let us suppose I am conscious of determining to take a walk. In the first place, I am conscious that it is I myself who determine, and secondly, that I have no feeling of being forced or compelled in so determining. What more is necessary to make my determination free than to know, as I do, that it is emphatically mine, and that I was exempt from compulsion in making it. Further, though I will not assert that I am conscious of having the power to choose which I will of two alternatives, yet I do maintain that when I have resolved upon anything, my consciousness tells me that the act of resolution is mine and that before determining it I stood in the same relation to two alternatives, *e.g.* to walk out or to stop at home. It tells me, further, that I have chosen one alternative, and I have a conviction almost as strong that I might have chosen the other—just as when I have drawn one of two balls out of a bag, I know by experience I have drawn one, and have a conviction founded on this experience that I might have drawn the other. In one word, I am perfectly sure that every time I will anything I am conscious that I myself perform the act, and I am quite unconscious of any necessity compelling me to perform it. Thus I deny point blank, the assertion that consciousness does not inform us that every act of will is free.

F. But suppose I concede that we have this

consciousness of freedom, that does not really prove anything, because if the will were not free we should none the less have precisely the same consciousness as we now have. Thus Bayle shows us that just as our consciousness of existence does not inform us whether we exist of ourselves, or whether we are indebted for our existence to another, so our consciousness of our acts of will cannot inform us whether we have produced them ourselves, or whether we receive them from the same cause which gave us our existence. He compares us to a conscious weather-cock impressed at the same time with a movement to the east and also with an internal inclination to turn to the east. Evidently such a weather-cock would be under the delusion that it turned itself to the east in accordance with its own inclination to go that way.

M. The case is not fairly stated. Our consciousness of our existence tells us nothing of how we began to exist or where we came from, but our consciousness of willing does tell us when it began and whence it proceeded. It cannot be said with any truth, then, that we are only conscious of willing in the same way as we are conscious of existing. The true statement of what consciousness tells us when we will, is not that we are in a state of willing, but that we are in the act of willing. Indeed, our consciousness tells us that no other act we perform —whether of imagining, believing, thinking, or anything else—is even nearly so much our own act as is our act of willing. But besides all this I think Bayle's weather-cock actually points against the truth of what he urges. He supposes it to be at the same

time both in the act of willing to turn to the east, and also being actually blown in that direction. This seems to me to be parallel with the co-existence of a desire on my part to go to the meeting of the British Association at Sheffield, together with my being at the same time seized, carried to the railway station, and sent to Sheffield by force. In that case my volition and the direction of my journey would coincide, but, nevertheless, my common sense would tell me plainly enough that this coincidence was due to my having both desired to go to Sheffield, and to my having also been forcibly sent there. What would be true in my own case must—accepting Bayle's illustration—be true also of the weather-cock; and so it would know, clearly enough, that it both wished to turn to the east and was also carried there, 'willy nilly,' by the wind.

F. Still, we have as yet not considered the force of 'motives.' You will admit that the will cannot act without a motive, and you will also admit that if there were but a single motive, the will would necessarily act in the direction of that motive. If, then, there exist two or more conflicting motives, the will must necessarily act in the direction of the strongest of those motives.

M. Please recollect the distinction between inclinations, desires, wishes, likings, etc., on the one hand, and the act of determining or making a resolution to act in some definite way on the other. The distinction is plain, since I may at the same time be acted on by two contradictory inclinations with reference to one and the same act. But I cannot determine in two contradictory ways. I must either

determine or remain undecided; and if I determine I must determine in one way or in another. It is necessary to keep this distinction clearly in view, because people so often say that they 'desire' or 'wish' to do a thing when, in reality, they mean that they will it. On the other hand, people often say that they 'prefer' a thing—a term which ought to denote the first act of will—when all they really mean is that they have a greater liking for it.

F. I recollect that Mill says, with respect to our consciousness of free will, 'I am told that whether I decide to do or to abstain I feel that I could have decided the other way. I ask my consciousness what I do feel, and I find indeed that I feel, or am convinced, that I could have chosen the other course if I had preferred it; but not that I could have chosen one course while I preferred the other.' Sir James Stephen, the judge, has also said: 'That any human creature ever under any conceivable circumstances acted otherwise than in obedience to that which for the time being was his strongest wish, is to me an assertion as incredible and unmeaning as that on a particular occasion two straight lines enclosed a space.'

M. These quotations you make afford good examples of the very ambiguity I refer to. If the judge by the word 'wish' or if Mill by the term 'preference' really meant 'will' or 'determination,' then these assertions are but the truism, 'no one can will what he does not will.' But if they mean something different, then both seem to me to be clearly wrong. They must then mean that we cannot determine in opposition to our strongest impulse, and,

as to that, everything depends on what we mean by the adjective 'strongest.'

F. You must admit that we always act according to our strongest motive.

M. I certainly am conscious, when under the influence of motives, that my ultimate choice is not forced on me; that, for example, when inclined to eat a cutlet or to give sixpence to a beggar, I can either do it or let it alone, though, of course, I may every now and then be overpowered by some violent desire or aversion. That there is this consciousness of freedom in determining is a fact for which I can cite no less a person than Mill himself as a witness. He says, 'We are certain that in the case of our volitions there is not this mysterious constraint. We know that we are not compelled to obey any particular motive.' As I have said, all depends on what is meant by the term 'strongest motive.' How do you judge of the strength of a motive?

F. As I judge of the strength of any other force —by its effects. I judge of it as we judge of the force of a bullet by its penetration into a target, or of the force of heat by our sensations and its action on a thermometer. We have thus effects of two very different orders: (1) effects on our sensitive being and (2) effects on mercury, made known to us, of course, through our senses. The latter order of effects, as less influenced by unknown causes, we take as our standard, and define that to be 'the greater heat' which 'most expands the mercury.' We may compare our sensations of heat with the thermometer, and say that they vary in intensity as it rises, but this will not always be really the case.

Let us compare this with our knowledge as to the strength of motives. We know their strength partly by their effects on our acts, as when one unopposed strong motive operates on us. We also know them by their effects on our feelings which, when of different kinds, it is often very difficult to compare and weigh. It is surely safer to rely upon the former test—which we may compare with the effect of heat on the mercury—than with the latter, which is purely subjective.

M. But some feelings of pleasure and pain we can compare together easily; as, for example, the comfortableness of two armchairs, or the sweetness of two kinds of champagne. In the same way, I am sure that I can easily compare the relative attractiveness of certain pleasures, and I am sure that I sometimes resolve in opposition to that which seems to promise me the fullest gratification. Therefore, if you ask me whether I always follow that motive which seems most to attract me, I unhesitatingly answer, 'No.'

F. That may be your persuasion, but you cannot know you are right. You cannot be sure you have accurately reviewed the varying play of many different motives on your will!

M. In the first place, let me remark that when you speak of estimating motives by their effects in producing action, you simply beg the question altogether. If you define 'strongest motive' as 'that which the will follows,' it is idle to profess to consider whether or not it always follows the strongest motive. It is asking whether the act of will always follows that which actually drags it along! But there is another

and a quite different standard by which we may estimate the strength of motives, a standard different altogether from any we can apply to heat or any other force and cause than a motive. In such other forces we can only judge as to their tendency to produce any effect by the effects they actually do produce. We can have no direct knowledge of their tendencies. But with respect to the action of motives, it is altogether different. Even when no act of volition results, we are still conscious of their influence on us, and may, in many cases at least, compare their relative strengths. We are directly aware not only of their effect, but also of their tendencies and of the ways and degrees in which they incline us to act. But to tend to produce action, and to produce it, are two different things. The mistake of determinists consists in enlarging mere 'tendency' (which consciousness vouches for) into 'production'—which consciousness not only does not vouch for but contradicts, for it says that the act is ours. Thus understood, it is not an idle question to inquire whether our act of will is always conformable to the strongest motive. Our consciousness informs us that certain motives are impelling us to form certain determinations; it distinguishes also between the relative force of these several motives, and it proclaims that none of these motives produce or necessitate the determination itself, which it affirms to be one's own act. It is the exercise of a new force, entirely distinct from the force of the motives. The existence of the strongest motive, and the influence which it exerts to urge us to an act of will, is due to some cause over which we have no control; of the existence

of that effect which we call 'an act of volition,' we are the cause—we produce it, and we continue it.

F. But if a man is not obliged to conform his volition to the strongest motive, how does it happen that by knowing a man's character and the motives which influence him, we can infallibly predict what his determination or 'act of will' will be?

M. Of course we can guess more or less accurately as to the matter, but certainly we cannot judge infallibly about it any more than we can be certain we shall not take the white ball out of a bag containing ninety-nine black balls and one white one. The power of prediction we have, is what we might expect to have considering how well we know that we ourselves do ordinarily act according to the impulse of strong motives, and considering also the multitude of our actions, which are merely automatic. But there is just that impossibility of certain and absolute prediction, which accords with the supposition of the freedom of the will.

F. You will, however, doubtless affirm that God foresees our acts of volition. But how can that possibly accord with our having any real freedom of will?

M. I deny altogether that God knows our volitions as men could alone know them, namely, by knowing the law of their causation; for our consciousness makes known to us that no such law, in our own case, exists in their regard. But we may well conceive that God knows them in some other way; and if that is the case, then His knowledge of our future acts no more interferes with our freedom than your knowledge of my past acts prevents their having been free. How God knows the future free

acts of men is a question we cannot answer; but that He may know them without interfering with their freedom is clear, if He knows them in some other way than through their law of causation.

F. But this freedom of will, if it exists, is a very wonderful thing. There is nothing else like it in nature, and it is the circumstance of its thus standing alone which no doubt makes it so unacceptable to many persons whose knowledge and intelligence you cannot deny.

M. Nor do I wish to. But the very passion and obstinacy with which the existence of our freedom is denied by these persons show how right you are in affirming that human volition stands alone in the world of phenomena. It is rather the consequences which follow from admitting our moral freedom, than any intellectual deficiency, which renders some men so determined never to admit it.

F. What are these consequences?

M. When any man comes to fully realise how rigid law rules all irrational nature—living and not living—and the immense multitude of our own automatic actions also, while at the same time he recognises the freedom of his will and his power of choosing, in certain cases, the less attractive of two competing objects, that man will recognise in his own being a power beyond everything else in nature. He will see that in thus intervening as a free cause in the series of phenomena, he is performing a sort of supernatural or miraculous action, and he will thereby be disposed to accept as congruous therewith the teachings of natural religion—a future life, response to prayer and even creative action, with which his

own free volition may be distantly compared. It is this consequence which makes free will hateful to men who are determined not to accept any religious belief. It is also very wounding to men's pride.

F. I cannot see that! Surely a man might well be proud of possessing such a miraculous power.

M. Nevertheless, it does shock the pride of a highly cultured man of powerful intellect to have it brought home to him that the poorest peasant is fully as capable as he himself is of performing the highest actions, namely, virtuous volitions. If there is such a thing as morality, it must be beyond comparison as to value with any intellectual gifts; and it necessarily follows that a poor paralysed old woman sitting in a chimney-corner may, by her good aspirations and volitions, be repeatedly performing mental acts compared with which the discovery by Newton of the law of gravitation is as nothing.

F. If we really have this freedom of soul to act as a cause in conformity to our perception of duty, then happiness ought always to be the consequence of virtue. But no one can successfully maintain that anything like microscopic justice is dealt out to men according to their actions. As to a future life, you yourself have maintained that the immaterial soul arises, varies, and is annihilated with the body it informs.

M. Certainly if the universe is governed by a just God, rewards and punishments after death are most assuredly needed. There are indeed some persons—mostly possessed of a good share of this world's advantages—who, on account of the exigencies of their philosophical position, venture to say that

each man does receive, even in this life, microscopic retribution for every act, word, and thought. Such a doctrine, however, is a mere gratuitous assertion, fit only for the credulous, and opposed to what men's own experience often tells them as to events in their own lives. With respect to what I said about the soul of living creatures, I never intended to include the soul of man amongst them. That stands in quite a different category from the soul of every other organism.

F. I of course see that a great difference exists between a man and a beast, and I see it much more plainly now than I did a little time ago. Nevertheless, the distinction you would now draw between man and beast is so very great a distinction.

M. But that this difference really is thus vast you will, I think, see, if you reflect that the human soul (as we experience it) is, in a sense, out of both space and time. Our soul exists now in such a relation to both the past and the future, that it can think both of 'before time was,' and of 'after time shall end in eternity.' It can also discuss the question as to the finitude or infinity of space, and consider a world of possible relations as well as of actual relations. The soul, though existing amidst a constant succession of changing conditions, can think of an eternal, unchanging absolute. The soul knows itself as looking before and after, and as that which both thinks and endures—persisting thus for years—or, in other words, as a spiritual substance. Above all, the soul can appreciate right and wrong, and now and then freely choose its motive; and so dominate and control the chain of physical causation by its free-

will. All these considerations show that its nature is far more widely removed from that of the active principle of an ape, than is the latter from a magnet. And as the soul, or active principle, of an ape differs from the activity of a magnet by a difference of kind, so the soul of a man differs yet more in kind from that of an ape. In a word, while the soul of every irrational animal is limited to feeling and imagination, the soul of man enters on and operates in a higher sphere, that of intellect and will. By 'intellect' it apprehends, through sense, what is beyond sense; and by 'will' it can perform, as we have seen, a sort of miracle in the world of physical nature.

F. But how can the soul thus extend beyond sense? The soul is, you say, in all cases 'the form of the body;' and you have represented the soul and body of every creature as bound together like the convexities and concavities of the same curved line. I cannot imagine your 'human soul.'

M. Of course you cannot, because we have no experience of a human soul without the body. But if you must have some sort of avowedly inadequate image, take the following: The soul of a brute may be imagined as a subtle force entirely immersed in matter and conterminous with the body, while the soul of man may be imagined as a similar force which is (although strictly amalgamated with all the matter of the body, so that the body and it form one) not entirely immersed in matter, but exceeds and extends beyond the structure it informs. Thus we may conceive the soul of man as acting on, and being affected by the material body (as is the soul of a brute); but, in virtue of its excess, as acting on and

directing that body in ways and degrees which the soul of the mere animal cannot compass. This non-limitation by the body, this so represented excess of the rational, human soul, also makes conceivable that it may survive the body in spite of its being, during life, so united with that body that it cannot be affected by matter save by the intervention of the body with which it is united; the actions and affections of which, are actions and affections of both the body and the soul. You will understand I only offer this as a quite inadequate image, practically useful to help us to conceive what is necessarily strictly unimaginable. This view harmonises with the exceedingly slight difference which exists between the brain of a man and the brain of an orang—the intellectual part of the soul being that which is not immersed and which has no bodily organ whatever.

F. What! Do you think that human intelligence and will have no organ? Is not the brain their organ?

M. I am convinced they have no organ whatever, although every highest thought or free volition must be accompanied by some sensuous image or phantasm. Therefore, some action of the organism—as necessary for the production of the sensuous phantasm—becomes indirectly necessary for the higher acts of pure intellect also. Such action is not necessary for the action of the intellect itself, but only for those material concomitants (words, images, or other symbols) which the incarnate soul needs as means for its intellectual activity here and now. The brain is a necessary organ for sensation, and, therefore, for all imagina-

tions and feelings, as also for all movements, and for the maintenance of the needful heat of the body. When we reflect on the great multitude of small movements which speech renders necessary, the only wonder is, not that such difference should exist, as does exist, between the brain of man and the brain of an orang, but rather that the difference should not be vastly greater—and this even on my hypothesis that the brain has nothing directly to do with intelligence and will. Aristotle saw clearly that the intellect had no organ, and amongst moderns, a very distinguished physiologist—Dr. Carpenter—says the same as to will. According to such a view as this, the soul may very well persist after death!

F. It is very difficult to conceive it as persisting, and your notion of a sort of protruding soul, extending beyond the body's limits, is a very odd one. It is as if each of us went about with a sort of aura or radiance round us, or with a halo round our heads, like mediæval saints!

M. You are quite welcome to smile at my image, which you know I plainly said was an inadequate though practically useful one. We cannot accurately imagine the soul as it even now exists and acts in each of us, and if we cannot do that, *à fortiori* we cannot imagine it as existing separately after death; for then, not only feeling and imagination, but even memory and knowledge, as we experience them now, will entirely cease.

F. Then those who deny the immortality of the soul are not so wrong after all!

M. Of course they are not, only they go too far. If they would limit themselves to denying its sur-

vival, as they now know it, or if they confined themselves to saying that they could not imagine its survival, I should have nothing to say against them. But the fact that it does not survive as we know it, and that we cannot imagine it in its separated state, are no reasons whatever for not believing in its survival. Because acts of intellect will cease, as we experience them, there is no need to think that they will not persist in any form at all—especially if, upon other grounds, there is reason to think that they will persist. Now, such reasons we have met with. They are: (1) the demands of justice and the need for adequate retribution; (2) the power which the soul of each one of us possesses of transcending the limits of time, space; and (3) its power of intervening as a free cause, and modifying the whole chain of physical causation by a quasi-supernatural act of volition.

F. Yet to maintain these views in the face of modern physical science and the progress of cerebral physiology, is a very bold thing. Such physiology shows us how distinctly the organism is involved in all intellectual action, and how even a man's character depends upon purely physical conditions. These views were all very well three centuries ago, but now, *nous avons changé tout cela!*

M. My dear Frankland, you know that I have the right to say a word or two in what concerns biological science, and I can assure you that none of the refinements of modern physiology affect the doctrine of the soul's survival one jot or tittle more than does the fact, known to every savage, 'that when the brains were out, the man would die.'

With the distinction I have pointed out between intellectual action and the (in us necessary) sensuous accompaniments of such action—a distinction pointed out ages ago—no scientific advance can affect the solid grounds of our belief in the distinctness and survival of that intellectual principle—the human soul. You see, then, that if the fulfilment of duty and consequent blessedness is the end of life, if we have free will and if the world is the work of an all good Eternal Cause, then the lives of the dwellers in this old abbey were by no means so irrational as you suppose. Given such a cause—that is, accept the idea of God—and worship follows as a rational, nay, a necessary, consequence. If there is a reality corresponding to our highest ideal—if there is a Being of absolute beauty and holiness—it follows as a strictly logical consequence that no conduct can be at once so foolish and so wicked as any voluntary refusal of obedience, veneration, or worship. If there were an embodiment of evil, then, under such circumstances, its motto must be *non serviam.*

F. Worship of some sort, perhaps, might be due —the spontaneous outpourings of a grateful heart at the joyous aspect of this beautiful world ; but not a grovelling self-abasement—not a churlish refusal of the goods which bounteous nature has provided, as if your Eternal Cause was an Eastern despot, pleased to witness sufferings, and gratified by the gross adulation and base flattery of his degraded slaves. No such worship as that for me, my friend !

M. Nor for me one bit more than for you ! But are you sure you do not misinterpret and misre-

present your more religious fellow men in what you have just said? I do not care, at present, to take up the cudgels in favour of the particular practices of these Cistercian monks, or for any monks, or for any Christians, for the matter of that; but I do not hesitate to assert that the principles which underlaid their conduct was rational, and even admirable. If God exists, no praises addressed to Him can be up to the mark—no one can flatter Him. That He should desire such praise simply follows as a necessity from His desire that we should approximate as much as possible to truth and justice. For, if God exists, no injustice can be so excessive, no error can be so profound, as to fail in offering the deepest adoration and greatest praise our minds can conceive or our actions express. To adore and praise to the utmost, is still to fall infinitely short of what is adequate and due.

F. Yet the modes of manifesting their religious convictions which these monks employed were so objectionable as to throw discredit on the very principles on which they acted. What can be more conspicuously barbarous than the worship they carried on, with its genuflections, prostrations, and almost ceaseless reiterations of senseless praises. Are not these things manifestly but survivals of devil worship—that is, of the worship, by barbarous savages, of the ghost of some deceased cannibal ancestor—some once powerful chief, blood-thirsty, cruel, and vain-glorious? Since all religious ceremonies have such a base and horrid origin, their essential nature must be bad. Happily, exaggerated ceremonies—such as those once practised in this

Abbey—have almost died out, though even in our national church there are still barbarous survivals enough in all conscience!

M. There are several distinct replies to what you say. In the first place, I do not admit that religious worship did spring from practices intended to propitiate ghosts; and many distinguished men, who are not Christians, quite reject that view. Even the stock case of the Fijians must be abandoned if, as Bastian contends, the Polynesians are all descended from more highly cultured races, whose complex and highly abstract mythologies are found surviving far and wide. But let us, for argument's sake, suppose that the origin of all these practices was such as you represent it to have been. What then?

F. Why, then, it is surely manifest that things which had so odious an origin should be abandoned.

M. I might reply by an *argumentum ad hominem.* Do you not recollect that when we were in London, at the ball of our present hostess, we were speaking about the distinction between human sentiments and brutal desires, and you were defending, with some energy, the view that there was an essential difference between the two? You then brought in, as an illustration, the difference between your own meaning when saluting a man you really revered, and any action due to mere fear. As to some of the reverences performed by savages, you said that if those actions were really the same as your action, then you ought to use your knowledge of your own meaning in what you do as a key to decipher the true meaning of their

acts of reverence—although, of course, it is plain enough that the same external gestures may accompany very different internal sentiments.

F. I recollect what I said, but, perhaps, I was wrong then.

M. No! you were quite right; for it is evident that since we are creatures with bodies, if we desire to express a real sentiment of reverence for anyone, we must use some bodily act—some form of words or gestures. Now, against verbal salutations, the very same objection may be brought as against our conventional gestures—as Herbert Spencer shows. We must, therefore, either invent some new forms of gesture or speech (obviously inconvenient and difficult to diffuse and gain general acceptance for), or else continue to use our traditional modes of salutation. Even if taking off your hat be a relic of a practice of taking off all your clothes to show yourself at the mercy of a conqueror, that is no reason against bowing nowadays, when the true meaning of the bow is well understood on both sides. No one would say that we ought not to use any signs of respect at all, and that we ought to enter another man's house and proceed to execute our errand in it, without one gesture of courtesy of any kind!

F. But it is not such gestures of respect as are signs of good-will to our fellows that I object to, but outrageous prostrations, clasping of hands, and genuflections in religious worship. If we have ceased to do such things ourselves, yet children are taught to put their hands together (as if offering them to a captor to be bound) and to kneel at their prayers!

M. Now it seems to me that, if we have a belief in God at all, then these practices to which you object are, whatever their origin, of the greatest value. For, by them, we are able to express in some faint degree that superlative reverence which is due to Him alone, and our intellectual recognition of the infinite distance between His majesty and holiness and our littleness. Although it is obviously quite impossible ever adequately to express this difference, yet it is most fortunate that the divinely ordained and sustained process of evolution has thus given us such convenient modes of expression—modes which become more and more fit and expressive as their use gradually dies out for every other purpose except religious worship. Thus it will come about by degrees that the public and private worship of God will become, as it ought to become, more and more marked off from every other act. Recollect, again, that by performing actions, with which actions certain feelings are habitually associated, we develop the feelings themselves; and if such feelings of reverence and adoration are good (as, on the theistic hypothesis they must be), then the performing of such external actions, and the use of such expressions as have become habitually associated with such feelings, must be extremely desirable. I think, therefore, that far from finding fault with such things on account of their origin, we may pardon them their supposed origin on account of the utility of the outcome. But the origin of our reverential gestures is said to be still more remote. A dog often crawls on its belly to its master when anticipating chastisement, and is

said to prostrate itself in deprecation before some other very much more powerful dog. Therefore, these sort of gestures are ingrained and innate in the nature of the higher animals, and must, therefore, also be ingrained and innate (as tendencies) in our own natures also. They are, then, our natural modes of expression, nor could any newly-invented ones, of a different kind, ever gain such acceptance and power to appeal to our feelings, or be so readily interpreted, as these naturally and spontaneously arising gestures.

F. But these monks were ascetics. They ungratefully spurned the goods with which the gods provided them!

M. If they did so they were, of course, very wrong. But whether they did or did not do so is a mere question of fact, which I do not care to pursue. But you will admit that it is always right to renounce any lower good which interferes with our obtaining other goods of a higher nature. If, therefore, asceticism consists, as a fact, in the voluntary renunciation of good things of a lower order, to attain to good of the moral order, no person possessed of reason can deny that it is right. The question of principle is thus settled; it remains but to inquire into the question of fact—whether such renunciation, as asceticism implies, really is useful. But there is yet another point. The voluntary sacrifice of pleasure is valuable as a test of human love, and may be eagerly sought for by him who practises it, as the best expression of the devotion he feels for another. Does not Emily value you the more on account of your disregard of certain worldly advantages you

willingly forego for her, and do not you rejoice at being able to give her this evidence of your regard? Would you forego it if you could? If this relation applies to human love, how much more to our love for God—a God in whom all our highest ideals are realised, of whom all we can conceive of goodness and beauty can serve but as the faintest and most distant adumbration! If in His service we may be permitted to undergo humiliation, pain, and suffering, who that understands the theistic conception does not see that it would be reasonable for us to welcome such humiliation and suffering? If in pursuit of all that brings us nearer to Him we can gratefully and lovingly deny ourselves lower pleasures, which tend to impede or slacken us in such pursuit, who that believes in God can doubt but that he ought to spurn such pleasures and be grateful to God for having granted him the opportunity of so spurning them? Thus you see the principle of asceticism is implanted as deeply in human nature as is the perception of virtue or the feeling of love; and wherever both these faculties abound and flourish, there asceticism will exist in practice—now carefully hidden, by humility, from the world, now happily manifest, and teaching us by its example.

F. Well, I confess I have never heard asceticism so defended—or rather advocated—before! Are you going to turn monk yourself? But these views of yours are part of a peculiar emotional tendency natural to you, and I believe, for my part, that the degree of apparent probability in theism may legitimately vary with the character of the mind which contemplates it. It depends not on its real objective

conceivability, but on its relative conceivability, *i.e.* its subjective conceivability in the mind of this or that individual. We ought, therefore, to be very tolerant; for even in those persons who try to be as impartial as possible, the inherent structures of their minds greatly affect their judgments.

M. No doubt; and I not only think with you that we ought to be very tolerant but that we ought to be sympathetic, and endeavour carefully to enter into the points of view of our opponents. Unless we do this, we cannot be really just to them. You are quite right, also, in what you say as to the effect of individual tendencies on judgment. We have considered already some of the effects of will, and no one can be really 'impartial.' But is it desirable that anyone should be impartial? For my part, I think no one in investigating the arguments as to theism ought to be impartial. No doubt if we were beings purely and solely intellectual, then it may be that we ought to be impartial even as to the evidence for theism; but being the emotional creatures we are, and seeing that emotional feelings of one kind or another cannot be excluded, we certainly ought not to try to eliminate an emotion which we see to be good and justifiable to reason. Now, a desire that all that is highest and best—ideal perfection—should really exist, is a desire evidently good and justifiable to reason. A feeling of indifference as to whether such highest object of aspiration and supreme justification and fulfilment of the moral law exists or not, cannot but be a defect. Men talk glibly about impartiality, as if it were a thing easily obtainable. But who can be impartial even in inves-

tigating a question touching his father's honour? In considering the question whether our highest ideal really exists or is but a dream, whether all our noblest hopes and purest aspirations are well grounded or but delusions, no consistent thinker—no rightly constituted mind—appreciating the importance of the problem could dare to be impartial, unless he would dare to be voluntarily and deliberately as impious as absurd.

F. My dear Maxwell, I see you are about to turn saint if not hermit, and your speculations are the outcome of your pious aspirations and intentions. Oh! now I see you are vexed, but you must know that I was only joking!

M. And you know I dislike such jokes, and you have just touched on the one reason why I hate to enter into this sort of talk, though I feel I must express my convictions when called upon by circumstances to say what they really are. But such a thesis, as I maintain, needs a worthy exponent; and people are so apt to fancy that if a man stands up for religion he must pose as a sort of extra good fellow, one who has less relish for pleasure and who is stronger against temptations than his neighbours are; forgetting that keenness of sight is no guarantee for the possession of a good pair of legs. '*Video meliora deteriorаque sequor*' is a motto the truth of which comes home to me only too well. So please understand, once for all, that if I say I see clearly in questions of this kind (as to which many estimable men seem to me to be grievously mistaken), I do not mean to imply that I am a bit better than other people, probably the other way, my responsibility being all the greater.

F. Don't be afraid; I will own that you are as inconsistent a fellow as ever you like! But if all you urge in favour of religion can be maintained, and I don't see how it can be denied, it can only be asserted on the hypothesis that God really is as good as you suppose. Now the facts of the world around us seem to me to be dead against that supposition. They seem to me to show that He is either not so very good or not so very wise, or else that He is very far indeed from being Omnipotent.

M. Please let me hear what your objections are. Although we should desire to find God, we should not ignore or pass over any real difficulty as to His existence, if we would obtain true mental rest and intellectual harmony.

F. I am glad to hear you allow that. I for one feel I could never rest satisfied by putting a difficulty on one side. My objections refer to the waste, failure, and suffering which pervade the world, and the general absence of any evidence of intelligence, as we understand intelligence, in its ordering; together with the slowness of the process of evolution. Besides, God is commonly regarded as a Creator, and science negatives any belief in creation!

M. I will do my best to answer your objections; but shall you be disposed, if I succeed, to accept theism and that philosophy which it has been my aim to show you the reasonableness of?

F. I am quite so disposed. These objections are my last objections, and I will gladly and thankfully accept belief in natural religion if you can show it is not unreasonable to do so. About to take the step in life I am about to take, you may be sure I

shall be glad to be able to back up ethics by theology, if I can do so without humbug or pretence. But can you dispose even of my first objection? You must recognise the foolish waste and blind prodigality of nature where 'of a thousand seeds she often brings but one to bear.' I ask you, Would you consider a man wise who spoilt a gallon of wine in order to fill a wine-glass?

M. My dear fellow, are not you, in doing one single action, often actuated by more than one intention? Any one, then, who believes in God can have no difficulty in supposing that any natural process which has a purpose apparent to us, may have a multitude of other purposes, and that the one purpose we apprehend may be but an exceedingly subordinate purpose amongst the many present to the Divine Mind but hidden from us. It has been suggested that if the big-bellied, small-brained Labyrinthodonts, which existed amidst the rank vegetation of the Carboniferous period, could have thoughts, they might have deemed that the constant rain of countless minute fern spores around them was a process of sheer waste. But we, who know the numberless purposes which coal aids steam-engines to fulfil, know that such Labyrinthodonts would have judged wrongly from their not being able to foresee events of what was, to them, an incalculably remote future. Let a brood of young birds die before fledging, their bodies feed a multitude of smaller creatures, these serve for others; and ultimately swarms of Bacteria reduce lifeless organic matter to elements which serve to nourish vegetation, which serves to feed worms and other creatures, which again actively minister to the

welfare of all the higher animals and of man. Nature is so arranged that the purpose of its First Cause can never be defeated, happen what may. The failure of one end is but the fulfilling of other and different ends. When the matter of the artist's or philosopher's brain becomes the prey of lowly organisms, it fulfils one Divine purpose, and another when it energises in creations of beauty or of wisdom. It is as impossible for any accident to defeat the purpose of Him whose will ordained every process, as it is for the irreligious man, by acting as impiously as he can, to do other than stultify himself by hastening on the fulfilment of God's purposes. There is absolutely no such thing as real failure, no such thing as absolute waste, in the whole universe of being!

F. What do you say to the great question of the existence of misery in a world made by a good God? What do you say to the petty cares, the tedious weariness, the cruel sufferings from gnawing pain, or worse from inconsolable grief and from terrible moral evil? The world suffers, and has even suffered for millions of millions of years ere man was! For untold ages bloodthirsty rapine has raged and reigned, and there have been cries of pain and limbs crushed in blood-stained jaws in the only one of God's worlds which we are able to know and understand. The very existence of many creatures is bound up with the sufferings of others; and parasites, external and internal, torture helpless hosts by means of carefully contrived implements for securing their hold and aiding their progress!

M. It is indeed quite true that perhaps for hundreds of millions of years, millions of millions of

individual animals have been in a state of unceasing battle, and that teeth, claws, hooks, and suckers have been devoted to the spilling of blood. Yet that very slaughter has had its effect in diminishing the sufferings of want, disease, and senile decay. 'Sharp be the brand and swift the blow and short the pain to undergo,' was no expression of malignity. But the essence of all suffering is mental. It is not the sensation, pure and simple, but such sensation accompanied by intellectual consciousness and reflection, which is so fearfully distressing. This distress the brute creation is spared; they suffer, but never reflect upon their sufferings, and therefore cannot be truly said to 'know' them.

F. But why could not all the good that exists have been evolved without any of this evil?

M. Why could we not have resignation without anything to be resigned to; pity and kind sympathy without anything to pity or sympathise with; self-devotion and self-sacrifice without the giving up of any pleasure thereby? I confess I cannot exactly tell you why we could not have had such things, but I should be still more at a loss to explain how we could. It seems to me that we could not spare evil —that if all pain and evil disappeared from human life, all that is most lovely would disappear with it. But you spoke against the omnipotence of God, and I believe there is, in a sense, a certain truth in your objection; for the supposed range of omnipotence has been probably exaggerated through our ignorance. All theologians assert that God can do nothing absurd or self-contradictory, and the range of objective contradiction may be much more exten-

sive than is commonly supposed. There may be inherent absurdity and contradiction in the notions that the plenitude of human virtue could have been called forth without the help of suffering, and that for the existence of sensuous pleasure, some sensuous pain was not an objectively necessary condition. But I think you have a tendency to exaggerate the evils of life; for on the whole, honesty is the best policy, and the sufferings of animals are exceptional. Again——

F. Can you deny the existence of a prodigious number of parasites?

M. No! But they probably have a share in a far-reaching scheme of beneficence which is beyond our grasp; however, they are probably the modified descendants of creatures which once lived a free, non-parasitic life.

F. So you think the evil as to them was permitted, not ordained.

M. A permission voluntarily given for a bad act is culpable, as well as its actual performance. But such parasitic existences may appear to us in a very different light from that in which you represent them. We may regard them as necessary parts of a vast scheme of infinite beneficence, wherein pain, disease, and death have a necessary place; and wherein pain and suffering have in the long run a beneficent action so infinitely surpassing the temporary evils they inflict, that could we know all they would merit our profoundest wonder and veneration. In such a matter we are constantly the dupes of an irrational attempt to estimate the universe from a purely human point of view.

F. But what other point of view can we men take?

M. I do not mean to object to our judging by human reason, for of course we can judge in no other way. I mean that we are apt to judge without allowing for, and trying to abstract, our specially human sympathies and our merely animal feelings, as distinguished from the judgments of pure reason. But there is another and far more satisfactory answer to this difficulty, and that is afforded by the existence of a future life. Take that into consideration, let there be ample compensation hereafter for all apparent injustice here, and your objection loses all its force.

F. Not all! Nothing can undo evil which has been endured!

M. Certainly not, but if that endurance is the cause of a good so much greater, that everyone will be thankful for having had to endure it when all is known, it will be *better* than undone. You may compare the discord of life as we know it, to the jarring sounds of an orchestra whilst tuning, before the performance of some masterpiece with which the life hereafter may be compared. The discords *are* discords, but they have their utility and their explanation in the after harmony to which they minister. The instruments must be set in order now, and life is a brief time allowed us for catching the leader's key-note, and setting every string entrusted to us in harmony therewith.

F. But why could there not be all the ultimate good without the sufferings of harmless beasts, for

which there is no compensation? How can such swarms of Bacteria be due to a good God?

M. Although the material universe is such that we cannot actually see that things are universally ordered for what is ultimately best, still no one can possibly say but that things may be so ordered. If, then, we have independent evidence of the existence of an Absolute Cause, who is the first principle of ethics, as of all else, then the universe must be so ordered. As to these Bacteria which appear to distress you so greatly, I regard them as most beneficent ministers to the world's welfare. If but for them, as we are told, no decomposition of dead organic matter would ever take place; the part they play is a simply indispensable one, as without them the world would be filled with carcasses.

F. But they would be eaten by other creatures.

M. But the eaters would leave their carcasses; and the mischief could not be done away with save by the intervention of minute creatures such as Bacteria are.

F. But a good God could not have instituted immoral instincts, such as those which prompt working-bees to kill drones, certain ants to make slaves, and cuckoos to lay their eggs as they do, their young when hatched brutally throwing out the rightful tenants of the nest.

M. This objection is but another instance of the misleading prejudice to which I just now referred. Such actions in human beings would be reprehensible as well as disgusting, but no possible action of any irrational creature can be immoral. Nothing is really

immoral which is not done against the light of reason. We view these phenomena with prejudiced eyes because we cannot help thinking of parallel actions performed by such creatures as ourselves. But a pure spirit could gaze upon every action performed by any mere animal, however disgusting to us, with perfect complacency and satisfaction, knowing that such creature was fitly playing its appointed part in nature. But any one of us can as little judge the scope of the whole universe, as a fly perched on a pinnacle of York Minster can perceive the plan, pressures, and bearings of the stones of that glorious pile.

F. But as I said before, the process of evolution is so slow and interrupted a process—too slow to be the work of a benign deity!

M. If this objection of yours has any force, it applies to a quick and uninterrupted process, as well as to a slow and interrupted one. If God could be blamed for not acting in a way which seems to us 'quick' and 'uninterrupted,' He could also be blamed for any delay at all, and for not having at once, instantaneously, created what might seem to us 'the best of all possible worlds!' But, as we may be sure that the creation, with all its apparent imperfections, is (as God sees it, and with His infinite purpose necessarily unfathomable by us) a creation ultimately for the best, so also we may be sure that the rate of its progress is that which is ultimately for the best.

F. But how is it that some creatures have parts which are utterly useless, such as the minute, functionless wings of the New Zealand apteryx, and the fœtal teeth of whalebone-whales, which teeth are never destined to cut the gum?

M. I may reply in the words of Buffon, 'Why is it considered so necessary that every part in an individual should be useful to the other parts, and to the whole animal? Should it not be enough that they do not injure each other, nor stand in the way of each other's fair development?' Moreover, such rudimentary structures may have a certain utility, may aid the physiological balance of the organism, after all! I cannot prove it to be so, but neither can you show that it is not so!

F. Neither can you deny that there is much in nature which is simply disgusting and repulsive to our feelings.

M. There are doubtless many objects very repulsive to our imaginations, but this does not show that such objects have no objective beauty, but only that our conditions debar us from being able to appreciate it. We may, however, conceive —whether we believe it or not—that there may be higher intelligences than our own, devoid of such human conditions. Such beings may obviously both perceive and admire beautiful harmonies and delicate adjustments in things which overpower us with disgust! The truth of this is shown by the fact that many a morbid growth has a certain beauty for the instructed eye of the surgeon or pathologist. It is not that such a thing is not a discord, when considered as a portion of the organism affected by it, but it is more or less a harmony, considered as to its own entity exclusively. Moreover, if such relative evils are necessary parts of a vast plan of preponderating good, they must, in their degree, be good also; and if they

are the outcome of a perfect intelligence to which that plan owes its being, they must—as duly responding to that intelligence—have an intrinsic harmony, and, therefore, an intrinsic beauty.

F. But as I said, God is generally regarded as a Creator, and science negatives a belief in creation.

M. Whether, as some distinguished physicists assert, there is evidence of a beginning or not, there is, at least, no philosophical incongruity in the doctrine of a creation. Those writers who deny it because it is unimaginable are very unreasonable; for let it be ever so certainly a fact, it would still remain unimaginable to us, because of its being a fact of which we cannot possibly have had any experience.

F. But it is inconceivable, because irreconcilable with your own theistic view; for it would divide God's unchanging, eternal existence into two eternities—one before and one after the act of creation.

M. But time is but an abstraction from abstractions—the endurance of all the endurances of enduring things. It does not, therefore, apply to God at all. With Him there is no past or future, and two eternities are no more than one. Here existence is an eternal present; and the old Hebrew name for God, 'I AM,' is wonderfully appropriate!

F. You may be able to justify the terms you use to denote your belief in a personal First Cause, but after all, you must admit that science has modified even your beliefs as to that matter, and that developed knowledge points to a very different conception of God from one due to the contemplation of the human mind only, and apart from physical science.

M. What you say is very true, but the diver-

gence between the human and divine does not seem, after all, to be greater than we might have expected it *à priori* to be. Those who accept the declaration that 'His ways are not as our ways,' ought to be prepared to find the world something very different from a piece of human workmanship. With this proviso, it does not seem to me but that such action as we discover immanent throughout nature, may rationally be taken to be from God. In the universe we everywhere find an action the results of which, as a whole, harmonise with man's reason, an action which is orderly and not fortuitous, while, at the same time, it is unlike human action.

F. Do you then attribute to the divine mind a conscious attention to all the details of the multifarious activities of the universe—its activities, physical, vital, sentient, and intelligent?

M. I do; but please remember that the inadequacy of every assertion made with respect to God is so great, and the difference between God's so-called 'attention' and anything we can conceive is so infinite, that it would be correct to deny such 'attention,' were not the denial an inconceivably greater error than is that involved in the assertion of His 'attention.' God attends to such things—in a supereminent way—because He actually acts in every action in nature. God is thus neither withdrawn from, nor identified with His material creation, and no part of it is left devoid of meaning or of purpose. The poet's remark as to the flower 'born to blush unseen, and waste its sweetness on the desert air,' is thus manifestly quite a mistaken one; since every creature of each order of existence, is ever,

while its existence is sustained, so complacently contemplated by God, that the intense and concentrated attention of all men of science together upon it could but form an utterly inadequate symbol of such divine contemplation.

F. But how does all this accord with what our moral sentiments tell us ought to be the character of God?

M. Granting the validity of the deductions of our reason as to the First Cause, then God—as the Sustainer of the universe—concurs by His action in every natural phenomenon, and has an infinite complacency in each. But there is a due, because rational, order in such complacency; and since we see clearly that 'goodness' is the highest of all qualities, an important consequence follows. Let us endeavour to bring home to ourselves the fact that the existence of a countless multitude of actions and interactions is revealed to us in every department of science. Let us consider the series of such in the physical, chemical and biological sciences, in the rise and fall of states, and the manifestations of art in all its branches. Let us contemplate the physical possibilities of being in the vast fields of stellar space, receding from us on all sides into unfathomable abysses and for incalculable ages, and then try to realise the thought that the divine complacency in all such phenomena is as nothing compared with that complacency with which He regards one single act of man's free will, directed in harmony with a moral perception, even though it be a mistaken one. If, then, this reasoning is valid, the last and highest lesson which nature (considered as a whole, *i.e.*, as both rational and sentient)

teaches us, is that the great First Cause has attributes of such a kind that the terms 'power,' 'knowledge,' 'goodness,' 'purpose,' and 'will,' are those least inadequate to convey to our minds a practically true conception and belief concerning them. Of such a cause, the word 'personality,' in a similarly analogous sense, can not only be fitly used, but must be positively affirmed, since not to affirm it is in fact (1) to deny to the First Cause the necessary adequacy for producing the effects we see, and (2) to endeavour to degrade Him to an order of existence lower even than that of mere man, since whatever has knowledge and will has personality. In a word, we learn that we and all the beings we see around us have for our origin, our sustentation, and our end, one only being—God. I say 'our end,' for in our last talk we saw that man has had a different origin from other creatures, and it is congruous therewith that his end should be different also. We have seen that man seeks, and must ever seek a good, and the ultimate good is God, in attaining to whom man attains at once the highest goodness and supreme beatitude.

F. But you do not notice what I said about the change in our conceptions of God which physical science has occasioned. Once, arbitrary intervention was hourly expected, and its continual recurrence believed in; but in science we meet with no arbitrary arrangements, no reiterated miracles; and no evolutionist would for one moment entertain the supposition that any physical process—in however early a stage of cosmic evolution—ever partook of a miraculous character any more than the vastly

complex processes which we patiently study, partake of such a character now.

M. I most willingly admit that much change has come over such conceptions as are commonly current amongst the many; but the views of learned theologians of seven hundred years ago agree much more exactly with modern scientific teaching than you seem to be aware of. Certainly no miracle can be expected in physical nature, and I will even go so far as to say that had we been present in spirit when the first man appeared upon the earth, we should not even then have been conscious of any miracle, but should merely have begun to see what we had not seen before.

F. You do admit, then, that physical science has had a beneficial effect on even theological conceptions?

M. Certainly I do; and I even admit a certain utility in erroneous philosophical views, and in those of the agnostic philosophy amongst the number. For grossly inadequate and absurd conceptions of God are widely spread, and the incautious language of well-intentioned, pious, popular writers is justly open to criticism. Of course, after all, the difference between our highest attainable conception of God and that of the rudest boor is as nothing compared with the difference between that highest conception and the divine reality. Nevertheless, it is a great gain for us to have a somewhat higher notion more widely diffused, and this may be brought about by views which, though erroneous, yet serve to make clearer to the popular mind the hopeless inadequacy of all symbols to convey a knowledge of the Abso-

lute Cause as He is. But since I freely admit the good which springs from the evil of false religious negations, I may call upon you in return to admit the good which has resulted from mistaken religious affirmations.

F. Do you ask me to admit that good results have followed from grovelling, abject superstitions, and degrading, groundless fears?

M. To call them 'degrading' simply, is to beg the question as to their utility. But something may be simultaneously elevating and degrading—degrading in one direction and respect, and elevating in another. Recollect that 'the fear of the Lord' has been asserted to be 'the beginning of wisdom,' and also that 'perfect love casteth out fear.' Thus fear —and also superstition—has its uses. God is really as much to be seen in the fall of a pebble as in the greatest physical wonder; but the fact was long unrecognised, and is now seen by but few. Men thought they saw divine action more clearly in 'wonders' than in ordinary events, and thus we became introduced, as it were, to perceptions which might otherwise have been far less readily and easily attainable.

F. I understand, then, that though you assert the existence of divine activity everywhere in nature, you do not believe in miracles?

M. I wish our discussion to be strictly confined to philosophy—including the question of a First Cause—and to avoid being led into any question as to revealed religion. I therefore decline to say anything about miracles as facts, and confine myself to saying that I see no incongruity in them if they are facts. Admitting a First Cause, I can well believe He

may interpose miraculously in the course of physical causation, because I so interfere myself.

F. You perform miracles!

M. Certainly! The exercise of my free volition is a truly uncaused action which intervenes in the course of physical causation, and alters the whole future of the universe for all eternity. This your agnostics and determinists would certainly call a 'miracle;' and as I have made you see the truth of free will, I may so far claim from you an admission in favour of the possibility and congruity of miracles, though as to their actual occurrence we will say nothing.

F. And can you believe in a divine action—analogous to, though infinitely transcending your free volition—throughout nature in the face of its constant uniformity?

M. The divine intelligence may exert an influence beyond the possibility of our experience, and may thence direct affairs within our experience by methods unimaginable to us. Acting beyond the sphere of human observation, God may so act as to produce effects which enter within the sphere of human observation. The real force of the objection to the belief in such divine action is that every image we can form of it is perceived by us to be incongruous and unsatisfactory. But if we set out by asserting the necessary impossibility of imagining anything of the kind, while denying that such impossibility forms the smallest reason for not believing it—if there is sufficient evidence in favour of it—then all the difficulty vanishes.

F. 'If there is!' I detest 'ifs' and 'may bes'

about such matters. We require a rational basis of fact as evidence. Supposing man to be in a state of probation in this life, it 'may be' that 'religious faith' and not 'reason' is an instrument serviceable for testing his goodwill. But 'religious faith' ought to have some basis of reason whereon to rest, or else it differs in nothing from mere superstition. It follows that we must investigate its rational basis by scientific methods.

M. Agreed! Indeed, I go further than you do. I say that nothing ought to be believed which reason does not sanction. I say also that we are here placed on our trial intellectually, as well as in other ways. This seems to me evident, for though we are forced by our nature to accept practically a belief in the external, independent world, and in our own substantial unity, yet we are not forced to accept them on reflection as speculative truths. This the existence of agnosticism and philosophical scepticism plainly shows. It is possible for a man to doubt (1) as to his own continued, substantial identity; (2) as to his body and its physical conditions; (3) as to his soul; (4) as to the truthfulness of his faculties; (5) as to the existence of an external, independent world; (6) as to his free will; (7) as to there being such a thing as morality, and (8) as to the being of God. But good, sound judgment consists in wisely estimating evidence and accepting what is evident in spite of the temptations of prejudice, conflicting desires, and pride. But the folly of most of these doubts we have agreed about in former conversations, and I hope you are now willing to repudiate them all?

F. I must confess that I really am so, but I should

like to hear you enumerate what you consider to be the advantages of the philosophy you advocate.

M. It has, I think, ten advantages. (1) It accounts for, and harmonises with the dicta of consciousness as to the Ego; (2) it accepts the declarations of reason as to ultimate, necessary truths; (3) it asserts that power of election and will which our reason and our perception of our moral responsibility assure us of; (4) it accepts the principle of contradiction, and so gives order to our cognitions; (5) it accords with the teaching of common sense, without being bound down within its limits; (6) it establishes the distinction between reason and instinct, and between rational and emotional language; (7) it takes cognisance of our highest perceptions, including those of truth, goodness, and beauty as such; (8) it supports and enforces moral teaching; (9) it harmonises with the declarations of natural religion; (10) it asserts its own truth by and in affirming the validity of our primary intuitions.

Thus we obtain a rational harmony through employing and trusting all our natural faculties and powers. This system is one which not only harmonises the declarations of all those faculties, but also harmonises these with the teachings of all the sciences, and the teachings of all the sciences one with the other.

We shall not, for a long time, I know, have the opportunity of such another talk. I hope, then, you will think well over these matters at this important crisis of your life.

F. My dear Maxwell, I will indeed. But now we had better go back; we shall not have too much time to spare before dinner.

M. Or to read a certain long letter which may be waiting for you now? Let us go! I have said my say with respect to philosophy, and as to the great step you contemplate, why——

F. What?

M. Quod faustum felix bonumque sit!

F. Amen! and may I before long have to express my good wishes for you on a similar occasion!

The end and object of all knowledge should be the guidance of human action to good results—in all the varied kinds and degrees of goodness of which that action is susceptible. We have seen that 'goodness' is something absolute, and cannot be analysed into 'happiness'; but, nevertheless, it is also indisputable that no human existence can be desirable by us, if entirely devoid of happiness.

The union of the most perfect goodness and the greatest happiness, however, supplies a complete and adequate object for human aspiration and effort. The great question whether such an object is or is not obtainable by us, must obviously depend upon conditions of the universe, which are beyond the reach of our direct observation, and can only be inferred by the help of any knowledge which may be obtainable as to the nature of its cause. Reason demands an Absolute Cause for the universe, even if deemed eternal, considered as one whole—a cause which, though immanent in it, is external to it, and which can be least inadequately symbolised (by us) through what we know as 'intelligence' and 'volition' —or, in one word, by 'personality.' By this sym-

bolism, we avoid, as far as possible, delusions due to the limitation of our faculties, and are enabled to recognise that the ethical and æsthetic puzzles of the world about us are puzzles to us only on account of that very limitation. In clearly apprehending that the Absolute First Cause is an all-perfect Being who has set before each man the task of conforming his conduct to right reason—according to the degree of his ability so to do—as a condition of beatitude, we have forced upon us the explicit recognition of that freedom of will the existence of which is implicitly acknowledged in every expression of moral reprehension or approval. But the full apprehension of the fact that man has the power of freely intervening in the course of physical causation, and (as the consequences of a single act may extend in ever widening circles in succeeding ages) so altering its whole future course for eternity, renders congruous a belief in analogous action on the part of a Creator and Sustainer of the universe. The world in which we live also teaches us that we should so cultivate our intellectual faculties as to apprehend, as clearly as we may, the various orders of beings with which we have to do, and the true relations they bear to one another, and to us. Of course, also, our actions ought to harmonise with our perceptions. Clearly, then, our actions should respond to our perceptions of the supremacy of ethics and of the true relations in which we stand to the Absolute Cause of our own being, and of all we know. In other words, if reason shows us anything, it shows us, most plainly of all things, that if there is one act which is eminently befitting us, one

act which is supremely rational, one act which is above every other ethically imperative, it is the act of divine worship; nor can that be complete and true (in beings such as we are—with bodies, as well as intellects), if an external expression never accompanies the internal action. Such manifestations, whether in the privacy and solitude of home, or in gatherings for public worship, are the logical outcome of that perception of the man of science who, looking abroad over all the orders of physical existence about him, declares[1] his 'conviction of the complete interdependence of organic and inorganic nature.' Such acts are but the natural result of his confidence, that the long series of past geological changes, the marvellous astronomically caused variations of terrestrial climate, the apparently fortuitous actions of wind and wave, of ocean current and mountain stream, though far too involved in their interdependencies and effects for the human mind to unravel, are, like the marvellous series of man's prehistoric and historic evolutions, parts of one mighty maze of being which, for all its inconceivable complexity, is 'NOT WITHOUT A PLAN.'

And if a plan may be traced in inorganic and irrational nature, *a fortiori*, in the order and arrangement of man's various psychical faculties a plan may also be descried. Aroused at first by the impulses of surrounding agencies on our several organs of sense, developed in the first place by automatic acts of mental association and unconscious inference, and secondly, by intercourse with other human beings,

[1] As, *e.g.*, does Alfred Russell Wallace, 'Island Life,' 1880.

and fully exercised in spontaneous intellectual perceptions and ratiocinations, the mind, by conscious and deliberate reflection, can become aware of the nature and relations of its various activities, and of the concord or conflict which may exist between the seeming declarations of self-consciousness, sense perception, intellectual intuition, reflective ratiocination, common sense, and human testimony.

If the arguments in the foregoing pages have any value, it is neither impossible nor even very difficult to show that all our faculties can be so exercised that each may, by its declarations, lend support to the declarations of all the rest. The result of such exercise must be a mental harmony; and the system of philosophy by which such concord is made both evident and practicable, may fairly appeal, as evidence of its truth, to that very harmony which it makes manifest. Such a philosophy justifies our spontaneous inferences, and affirms the veracity of our senses, and of all our natural powers. More than this, it shows the harmony which exists, and must exist, between our thoughts and things external. Not that it teaches the institution of a pre-established harmony between two entirely independent worlds—one material, the other immaterial; but that it shows the human intellect to have been created capable, by its power of abstraction, of truly apprehending the world about it as it really exists in itself, and of recognising therein the impress of that divine Intellect which it can rationally infer to be the First Cause of both.

Such a system, as justifying the spontaneous,

natural dictates of man's uncultured reason by philosophical analysis, and as seeking to make plain the concord of the world of NATURE with the world of THOUGHT, may perhaps be allowed (if it succeeds in its task) to have made good its claim to the honourable title of 'A NATURAL PHILOSOPHY.'

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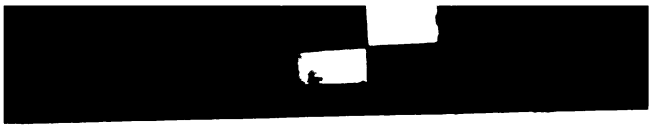

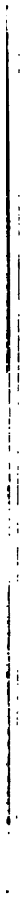

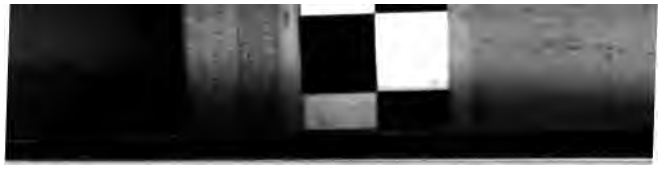

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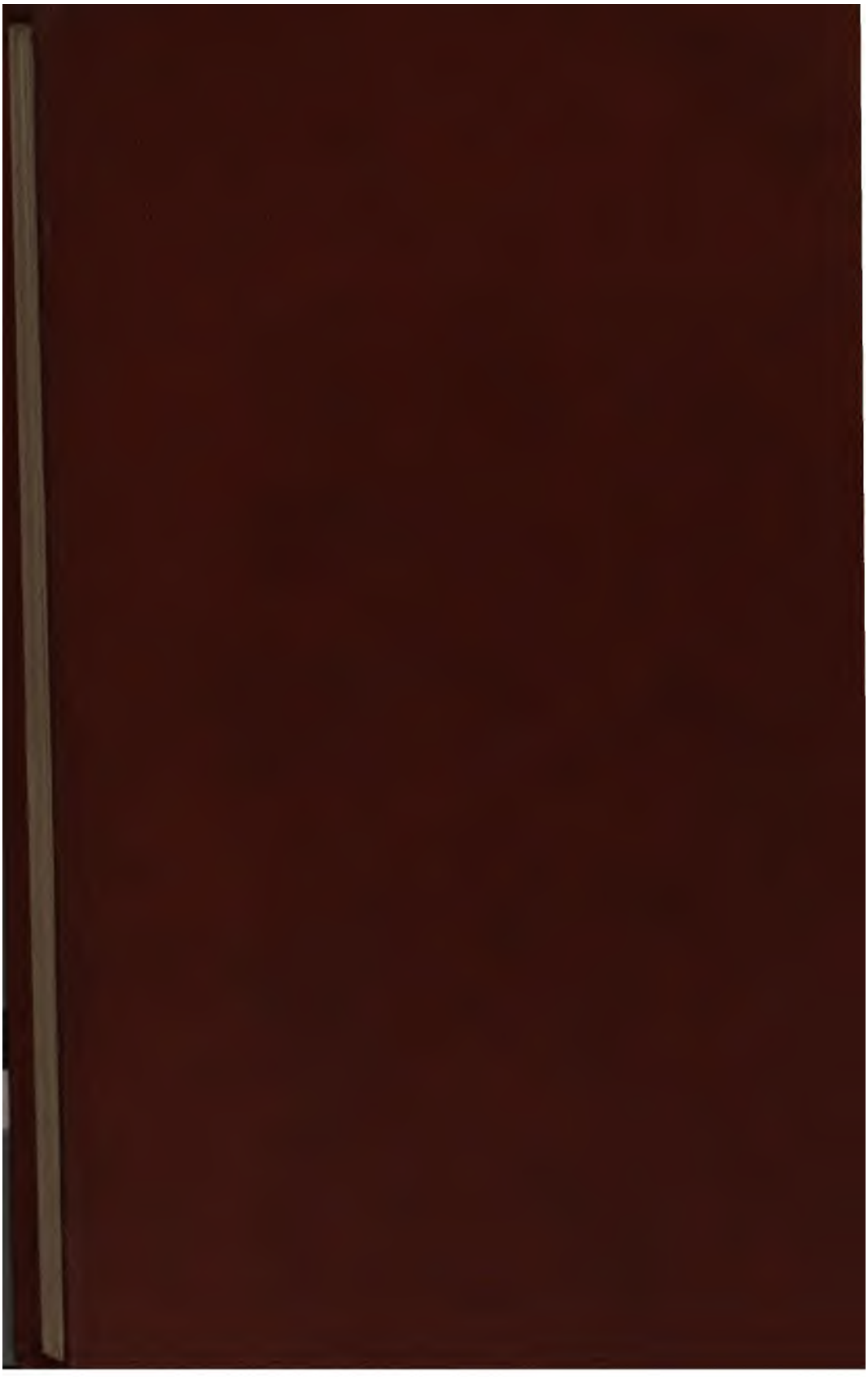
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